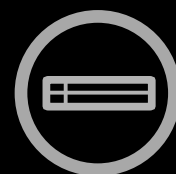




ThinkServer RD340 and RD440 Operating System Installation Guide



ThinkThink**ThinkServer**Think

Note: Before using this information and the product it supports, be sure to read and understand the *Read Me First* and *Safety, Warranty, and Support Information* that came with your product.

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Chapter 1. Before installing an operating system

Before installing an operating system, do the following:

- Copy the driver for onboard Serial Attached SCSI (SAS) software Redundant Array of Independent Disks (RAID) or the installed RAID card from the *ThinkServer® EasyStartup* DVD that comes with your server to a Universal Serial Bus (USB) storage device (SCSI is the acronym for Small Computer System Interface).
- Set the optical drive that you want to use as the first startup device. Depending on the server model, an external optical drive might be required.

Note: If you want to install an operating system in Unified Extensible Firmware Interface (UEFI) mode, set the UEFI drive as the first startup device.

Chapter 2. Installing an operating system in legacy mode

This chapter provides information about installing the following operating systems and hypervisors in legacy mode:

- Microsoft® Windows Server® 2008 Datacenter Edition (x64 and x86)
- Microsoft Windows Server 2008 Enterprise Edition (x64 and x86)
- Microsoft Windows Server 2008 Standard Edition (x64 and x86)
- Microsoft Windows Server 2008 R2 Datacenter Edition with Service Pack 1
- Microsoft Windows Server 2008 R2 Enterprise Edition with Service Pack 1
- Microsoft Windows Server 2008 R2 Standard Edition with Service Pack 1
- Microsoft Windows® Small Business Server 2011 Essentials
- Microsoft Windows Small Business Server 2011 Standard
- Microsoft Windows Small Business Server 2011 Premium Add-on
- Microsoft Windows Server 2012 Datacenter Edition (x64)
- Microsoft Windows Server 2012 Standard Edition (x86)
- Microsoft Windows Server 2012 Essentials Edition
- Microsoft Windows Server 2012 R2 Datacenter Edition
- Microsoft Windows Server 2012 R2 Essentials Edition
- Microsoft Windows Server 2012 R2 Standard Edition
- SUSE Linux® Enterprise Server 10 with Service Pack 4 (x64 and x86)
- SUSE Linux Enterprise Server 11 with Service Pack 2 (x64 and x86)
- SUSE Linux Enterprise Server 11 with Service Pack 3 x64 and x86)
- Red Hat® Enterprise Linux AS 5.9 (x64 and x86)
- Red Hat Enterprise Linux AS 5.10 (x64 and x86)
- Red Hat Enterprise Linux AS 6.4 (x64 and x86)
- Red Hat Enterprise Linux AS 6.5 (x64 and x86)
- VMware® ESXi 5.1 Update 1 hypervisor
- VMware ESXi 5.5 hypervisor
- Hyper-V® Server 2008
- Hyper-V Server 2008 R2 with Service Pack 1
- Hyper-V Server 2012
- Hyper-V Server 2012 R2
- Citrix® XenServer® 6.0.2
- Citrix XenServer 6.1

Before installing an operating system in legacy mode

Before installing an operating system in legacy mode, do the following:

1. Perform the operations in Chapter 1, see Chapter 1 “Before installing an operating system” on page 1 .
2. Start the Setup Utility program.

3. On the **Boot Options** menu, select **CSM parameter/PXE OpROM policy**.
4. Select **Legacy only**.

Installing the Microsoft Windows Server 2008 operating system and drivers

This topic provides instructions on how to install the following operating systems and drivers:

- Microsoft Windows Server 2008 Datacenter Edition (x64 and x86)
- Microsoft Windows Server 2008 Enterprise Edition (x64 and x86)
- Microsoft Windows Server 2008 Standard Edition (x64 and x86)

Installing the Microsoft Windows Server 2008 operating system

To install the Microsoft Windows Server 2008 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the message Press any key to boot from cd or dvd... is displayed, press any key. If the message Windows Setup [EMS Enabled] is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the “Enter your language and other preferences” window is displayed, configure the language and other options as you need and then click **Next**.
4. Click **Install now**.
5. Type your product key and then click **Next**.
6. Select the operating system that you want to install. Then, click **Next**.
7. Read the license terms and select **I accept the license terms**. Then, click **Next**.
8. Select the type of installation as you need. The following steps are based on the scenario that **Custom: (Advanced)** is selected in this step.
9. In the “Where do you want to install Windows?” window, click **Load driver**.
10. Connect the USB storage device that contains the driver to your server, and then go to the folder where the driver is stored.
11. Click **OK**. The “Select the driver to install” window is displayed.
12. Select **Hide drivers that aren’t compatible with this computer’s hardware**, and then select the driver that you want to install on your server. Click **Next**.
13. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**.
14. Select the hard disk drive on which you want to install the operating system, and then click **New**.
15. Type the amount of space (in MB), and then click **Apply**.
16. Select the drive partition on which you want to install the operating system, and then click **Next**. The installation begins.

Note: Your server will restart several times during the installation.

17. Change your password when prompted.

Note: The password must be a combination of upper case letters, lower case letters, and numbers.

18. Follow the instructions on the screen to log in to the operating system when prompted.

Installing the driver for the chipset

To install the driver for the chipset, do the following:

1. Log in to the operating system and insert the *ThinkServer EasyStartup* DVD into the optical drive. The *ThinkServer EasyStartup* DVD runs automatically.

Note: If the DVD does not run automatically, click **Run launch.exe** in the AutoPlay window.

2. In the “End User License Agreement” window, click **Accept**.
3. In the installation window, click **Driver Install**.
4. Select your server model from the **Server Model** drop-down list box, the operating system from the **Operating System** drop-down list box, and the driver from the **Select a Driver** drop-down list box.
5. Click **Install**.

Note: If prompted, click **Yes**.

6. In the “Welcome to the Setup Program” window, click **Next**.
7. In the License Agreement window, click **Yes**.
8. In the Readme File Information window, click **Next**.

Note: If prompted, select **Always trust software from Intel Corp-Chipset INF** and click **Install**.

9. In the Setup Progress window, click **Next**.
10. Select **Yes, I want to restart this computer now**. Then, click **Finish** to restart your server.

Installing the driver for an Ethernet card

To install the driver for an Ethernet card, do the following:

1. Log in to the operating system and insert the *ThinkServer EasyStartup* DVD into the optical drive. The *ThinkServer EasyStartup* DVD runs automatically.

Note: If the DVD does not run automatically, click **Run launch.exe** in the AutoPlay window.

2. In the “End User License Agreement” window, click **Accept**.
3. In the installation window, click **Driver Install**.
4. Select your server model from the **Server Model** drop-down list box, the operating system from the **Operating System** drop-down list box, and the driver from the **Select a Driver** drop-down list box.
5. Click **Install** to install the driver.

Note: If prompted, click **Yes**.

6. If prompted, click **Yes** to restart your server.

Installing the driver for an onboard graphics card

To install the driver for an onboard graphics card, do the following:

1. Log in to the operating system and insert the *ThinkServer EasyStartup* DVD into the optical drive. The *ThinkServer EasyStartup* DVD runs automatically.

Note: If the DVD does not run automatically, click **Run launch.exe** in the AutoPlay window.

2. In the “End User License Agreement” window, click **Accept**.
3. In the installation window, click **Driver Install**.
4. Select your server model from the **Server Model** drop-down list box. Select the operating system from the **Operating System** drop-down list box.

5. Select **ASPEED Display Controller (AST2300)** from the **Select a driver** drop-down list box. Then, click **Install**.

Note: If prompted, click **Yes**.

6. Click **Yes** to restart your server after the installation is completed.

Installing the driver for an HBA card

To install the driver for a host bus adapter (HBA) card, do the following:

1. Log in to the operating system and insert the *ThinkServer EasyStartup* DVD into the optical drive. The *ThinkServer EasyStartup* DVD runs automatically.

Note: If the DVD does not run automatically, click **Run launch.exe** in the AutoPlay window.

2. In the “End User License Agreement” window, click **Accept**.
3. In the installation window, click **Driver Install**.
4. Select your server model from the **Server Model** drop-down list box. Select the operating system from the **Operating System** drop-down list box.
5. Select the corresponding HBA card driver from the **Select a Driver** drop-down list box. Then, click **Install**.

Note: If prompted, click **Yes**.

6. Click **Yes** to restart your server after the installation is completed.

Installing the driver for Intel Management Engine Interface

To install the driver for Intel® Management Engine Interface, do the following:

1. Log in to the operating system and insert the *ThinkServer EasyStartup* DVD into the optical drive. The *ThinkServer EasyStartup* DVD runs automatically.

Note: If the DVD does not run automatically, click **Run launch.exe** in the AutoPlay window.

2. In the “End User License Agreement” window, click **Accept**.
3. In the installation window, click **Driver Install**.
4. Select your server model from the **Server Model** drop-down list box. Select the operating system from the **Operating System** drop-down list box.
5. Select **Intel Management Engine Interface** from the **Select a Driver** drop-down list box. Then, click **Install**.

Note: If prompted, click **Yes**.

6. Click **Yes** to restart your server after the installation is completed.

Installing the driver for a CNA card

To install the driver for a converged network adapter (CNA) card, do the following:

1. Log in to the operating system and insert the *ThinkServer EasyStartup* DVD into the optical drive. The *ThinkServer EasyStartup* DVD runs automatically.

Note: If the DVD does not run automatically, click **Run launch.exe** in the AutoPlay window.

2. In the “End User License Agreement” window, click **Accept**.
3. In the installation window, click **Driver Install**.

4. Select your server model from the **Server Model** drop-down list box. Select the operating system from the **Operating System** drop-down list box.
5. Select the corresponding CNA card driver from the **Select a driver** drop-down list box. Then, click **Install**.

Note: If prompted, click **Yes**.

6. Click **Yes** to restart your server after the installation is completed.

Installing the Microsoft Windows Server 2008 R2 operating system and drivers

This topic provides instructions on how to install the following operating systems and drivers:

- Microsoft Windows Server 2008 R2 Datacenter Edition with Service Pack 1
- Microsoft Windows Server 2008 R2 Enterprise Edition with Service Pack 1
- Microsoft Windows Server 2008 R2 Standard Edition with Service Pack 1

Installing the Microsoft Windows Server 2008 R2 operating system with Service Pack 1

To install the Microsoft Windows Server 2008 R2 operating system with Service Pack 1, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the message Press any key to boot from cd or dvd... is displayed, press any key. If the message Windows Setup [EMS Enabled] is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the “Enter your language and other preferences” window is displayed, configure the language and other options as you need and then click **Next**.
4. Click **Install now**.
5. Select the operating system that you want to install. Then, click **Next**.
6. Read the license terms and select **I accept the license terms**. Then, click **Next**.
7. Select the type of installation as you need. The following steps are based on the scenario that **Custom: (Advanced)** is selected in this step.
8. In the “Where do you want to install Windows?” window, click **Load driver**.
9. Connect the USB storage device that contains the driver to your server, and then go to the folder where the driver is stored.
10. Click **OK**. The “Select the driver to install” window is displayed.
11. Select **Hide drivers that aren’t compatible with this computer’s hardware**, and then select the driver that you want to install on your server. Click **Next**.
12. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**.
13. Select the hard disk drive on which you want to install the operating system, and then click **New**.
14. Type the amount of space (in MB), and then click **Apply**. Click **Yes** if prompted.
15. Select the drive partition on which you want to install the operating system, and then click **Next**. The installation begins.

Note: Your server will restart several times during the installation.

16. Change your password when prompted.

Note: The password must be a combination of upper case letters, lower case letters, and numbers.

17. Follow the instructions on the screen to log in to the operating system when prompted.

Installing drivers for a Windows Server 2008 R2 operating system with Service Pack 1

To install drivers for a Windows Server 2008 R2 operating system with Service Pack 1, refer to the related topics.

- “Installing the driver for the chipset” on page 5 .
- “Installing the driver for an Ethernet card” on page 5 .
- “Installing the driver for an onboard graphics card” on page 5 .
- “Installing the driver for an HBA card” on page 6 .
- “Installing the driver for Intel Management Engine Interface” on page 6 .
- “Installing the driver for a CNA card” on page 6 .

Installing the Microsoft Windows Small Business Server 2011 Essentials operating system

This topic provides instructions on how to install the Microsoft Windows Small Business Server 2011 Essentials operating system.

Note: Before installing this operating system, connect your server to the network.

To install the Microsoft Windows Small Business Server 2011 Essentials operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Connect the USB storage device that contains the required driver to your server. Then, start the server from the optical drive.

Note: If the message Press any key to boot from cd is displayed, press any key. If the message Windows Setup [EMS Enabled] is displayed, press Enter.

2. In the Installing Windows window, select **New Installation**.

Note: If your server already has an operating system installed, another option **Repair an Existing Installation** also is displayed. The following steps are based on the scenario that **New Installation** is selected in this step.

3. Click **Load drivers** and go to the folder where the driver is stored. Click **OK** to load the drivers.
4. Select **I understand that if I click Install, all files and folders on your primary hard drive will be deleted**. Then, click **Install** to start the operating system installation. The Install Windows window is displayed. Wait for a moment.
5. When the message Errors occurred during installation is displayed, connect the USB storage device that contains the driver for the Ethernet card to your server. Press Shift+F10, input the command `devmgmt.msc`, and then press Enter.
6. In the Device Manager window, click **other devices**, and then right-click **Ethernet Controller**.
7. Click **Update Driver Software → Browse my computer for driver software**.
8. Go to the folder where the driver is stored, and then click **Next**.
9. In the “Update Driver Software-Intel... Connection” window, click **Close**. Go back to the command window and close it.
10. Go back to the “Errors occurred during installation” window, and click **Restart** to restart your server.

11. When the “Windows Small Business Server 2011 window” is displayed, configure the language and other options as you need, and then click **Next**.
12. In the “Verify the date and time settings” window, configure the date and time. Then, click **Next**.
13. Read the license terms and select **I accept the license**. Then, click **Next**.
14. Type your product key and then click **Next**.
15. Personalize the server by typing the user name, and then click **Next**.
16. In the “Provide your administrator information (account 1 of 2)” window, type your user name and password. Then, click **Next**.

Note: The password must contain at least eight characters and consist of upper case letters, lower case letters, and numbers.
17. In the “Provide your administrator information (account 2 of 2)” window, type your user name and password, and then click **Next**.
18. In the “Keep your server up-to-date automatically” window, configure the settings as you need. Your server will restart several times.
19. When prompted, click **Close**. The installation is completed.

Installing drivers for the Windows Small Business Server 2011 Essentials operating system

To install drivers for the Windows Small Business Server 2011 Essentials operating system, refer to the related topics.

- “Installing the driver for the chipset” on page 5 .
- “Installing the driver for an Ethernet card” on page 5 .
- “Installing the driver for an onboard graphics card” on page 5 .
- “Installing the driver for an HBA card” on page 6 .
- “Installing the driver for Intel Management Engine Interface” on page 6 .
- “Installing the driver for a CNA card” on page 6 .

Installing the Microsoft Windows Small Business Server 2011 Standard operating system

This topic provides instructions on how to install the Microsoft Windows Small Business Server 2011 Standard operating system.

Note: Before you install this operating system, connect your server to the network.

To install the Microsoft Windows Small Business Server 2011 Standard operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.

Note: If the message Press any key to boot from cd is displayed, press any key. If the message Windows Setup [EMS Enabled] is displayed, press Enter.

2. In the Installing Windows window, select the language and other options. Then, click **Next**.
3. Click **Install now**.
4. Read the license terms and select **I accept the license terms**. Then, click **Next**.
5. Select the type of installation as you need. The following steps are based on the scenario that **Custom (Advanced)** is selected in this step.

6. In the “Where do you want to install Windows?” window, connect the USB storage device that contains the driver to your server and click **Load Driver**.
7. Go to the folder where the driver is stored and click **OK**.
8. Select the driver that you want to install and click **Next** to install the driver.
9. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**.
10. Select the hard disk drive on which you want to install the operating system, and then click **New**.
11. Type the amount of space (in MB), and then click **Apply**.
12. In the Install Windows window, click **OK**.
13. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

Notes:

- Your server will restart several times during the installation.
 - The drive partition must be greater than 80 GB. It is recommended that the drive partition is greater than 120 GB.
14. In the Continue Installation window, select **Clean Install**. Then, click **Next**.
 15. Click **Open Date and Time to verify the clock and time zone settings** to set your date and time. Then, click **Next**.

Note: If the server can identify the Ethernet card, go to step 22 after step 15.

16. When the “Cannot find the local network” window is displayed, connect the USB storage device that contains the driver for the Ethernet card to your server. Press Shift+F10, input the command `devmgmt.msc`, and press Enter.
17. In the Device Manager window, click **other devices**, and then right-click **Ethernet Controller**.
18. Click **Update Driver Software → Browse my computer for driver software**.
19. Go to the folder where the driver is stored, and then click **Next**.
20. In the “Update Driver Software-Intel... Connection” window, click **Close**. Go back to the command window and close it.
21. Go back to the “Cannot find the local network” window, and click **Back** to return to the “Verify the clock and time zone settings” window. Then, click **Next**.
22. In the “Server network configuration” window, configure the network settings as you need. Then, click **Next**.
23. In the Get important updates window, select the update method as you need.

Note: The following steps are based on the scenario that **Do not get the most recent installation updates** is selected in this step.

24. In the Connecting your server window, configure the company information as you need. Click **Next**.
25. Personalize the server and network information as you need. Click **Next**.
26. In the “Add a network administrator account” window, set your user name and password. Then, click **Next**.

Note: The password must contain at least eight characters and consist of upper case letters, lower case letters, and numbers.

27. In the “That is all the information needed” window, click **Next** to restart the server. When the Expanding and installing files window is displayed, the server starts installing files automatically. Your server will restart several times.
28. When prompted, click **Close the program** to log in to the operating system.

Installing drivers for the Windows Small Business Server 2011 Standard operating system

To install drivers for the Windows Small Business Server 2011 Standard operating system, refer to the related topics.

- “Installing the driver for the chipset” on page 5 .
- “Installing the driver for an Ethernet card” on page 5 .
- “Installing the driver for an onboard graphics card” on page 5 .
- “Installing the driver for an HBA card” on page 6 .
- “Installing the driver for Intel Management Engine Interface” on page 6 .
- “Installing the driver for a CNA card” on page 6 .

Installing the Microsoft Windows Small Business Server 2011 Premium Add-on operating system

This topic provides instructions on how to install the Microsoft Windows Small Business Server 2011 Premium Add-on operating system.

To install the Microsoft Windows Small Business Server 2011 Premium Add-on operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.

Note: If the message Press any key to boot from cd is displayed, press any key. If the message Windows Setup [EMS Enabled] is displayed, press Enter.

2. In the Installing Windows window, select the language and other options. Then, click **Next**.
3. Click **Install now**.
4. Select the operating system that you want to install, and then click **Next**.
5. Read the license terms and select **I accept the license terms**. Then, click **Next**.
6. Select the type of installation as you need. The following steps are based on the scenario that **Custom (Advanced)** is selected in this step.
7. In the “Where do you want to install Windows?” window, connect the USB storage device that contains the driver to your server and click **Load Driver**.
8. Go to the folder where the driver is stored and click **OK**.
9. Select the driver that you want to install and click **Next** to install the driver.
10. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**.
11. Select the hard disk drive on which you want to install the operating system, and then click **New**.
12. Type the amount of space (in MB), and then click **Apply**.
13. In the Install Windows window, click **OK**.
14. Ensure that the drive partition is correct, and then click **Next**. The installation begins.
15. Change your password when prompted.

Note: The password must be a combination of upper case letters, lower case letters, and numbers.

16. Follow the instructions on the screen to log in to the operating system when prompted.

Installing drivers for the Windows Small Business Server 2011 Premium Add-on operating system

To install drivers for the Windows Small Business Server 2011 Premium Add-on operating system, refer to the related topics.

- “Installing the driver for the chipset” on page 5 .
- “Installing the driver for an Ethernet card” on page 5 .
- “Installing the driver for an onboard graphics card” on page 5 .
- “Installing the driver for an HBA card” on page 6 .
- “Installing the driver for Intel Management Engine Interface” on page 6 .
- “Installing the driver for a CNA card” on page 6 .

Installing the Microsoft Windows Server 2012 operating system and drivers

This topic provides instructions on how to install the following operating systems and the drivers:

- Microsoft Windows Server 2012 Datacenter Edition
- Microsoft Windows Server 2012 Standard Edition

Installing the Microsoft Windows Server 2012 operating system

To install the Microsoft Windows Server 2012 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the message Press any key to boot from CD is displayed, press any key. If the message Windows Setup [EMS Enabled] is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the Windows Server 2012 window is displayed, configure the language and other options as you need, and then click **Next**.
4. Click **Install now**.
5. Type your product key and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
6. Select the Windows operating system edition that you want to install. Then, click **Next**. The following steps are based on the scenario that **Windows Server 2012 Standard (Server with a GUI)** is selected in this step.
7. Read the license terms and select **I accept the license terms**. Click **Next**.
8. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install Windows only (Advanced)** is selected in this step.
9. In the “Where do you want to install Windows?” window, connect the USB storage device that contains the driver to your server and click **Load Driver**.
10. Go to the folder where the driver is stored and click **OK**. The “Select the driver to install” window is displayed.
11. Select **Hide drivers that aren’t compatible with this computer’s hardware**, and then select the driver that you want to install on your server. Then, click **Next**.
12. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**.
13. Select the hard disk drive on which you want to install the operating system, and then click **New**.
14. Type the amount of space (in MB), and then click **Apply**.

15. In the Windows Setup window, click **OK**.
16. Ensure that the drive partition is correct, and then click **Next**. The installation begins.
17. When the Settings window is displayed, set an administrator password and click **Finish**. Then, follow the instructions on the screen to log in to the operating system when prompted.

Installing drivers for a Windows Server 2012 operating system

To install drivers for a Windows Server 2012 operating system, refer to the related topics.

- “Installing the driver for the chipset” on page 5 .
- “Installing the driver for an Ethernet card” on page 5 .
- “Installing the driver for an onboard graphics card” on page 5 .
- “Installing the driver for an HBA card” on page 6 .
- “Installing the driver for Intel Management Engine Interface” on page 6 .
- “Installing the driver for a CNA card” on page 6 .

Installing the Microsoft Windows Server 2012 Essentials operating system

This topic provides instructions on how to install the Windows Server 2012 Essentials operating system.

Note: Before installing this operating system, connect your server to the network.

To install the Windows Server 2012 Essentials operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the message Press any key to boot from CD or DVD... is displayed, press any key. If the message Windows Setup [EMS Enabled] is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the Windows Server 2012 window is displayed, configure the language and other options as you need, and then click **Next**.
4. Click **Install now**.
5. Type your product key and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
6. Read the license terms and select **I accept the license terms**. Then, click **Next**.
7. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install Windows only (Advanced)** is selected in this step.
8. In the “Where do you want to install Windows?” window, click **Load driver**. The Load driver window is displayed.
9. Connect the USB storage device that contains the driver to your server, and then go to the folder where the driver is stored. Click **OK**. The “Select the driver to install” windows is displayed.
10. Select **Hide drivers that aren’t compatible with this computer’s hardware**, and then select the driver that you want to install on your server. Then, click **Next**.
11. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**. Then, click **New**.
12. Type the amount of space (in MB), and then click **Apply**.
13. In the Windows Setup window, click **OK**.
14. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

Note: Your server will restart several times during the installation.

15. Configure the date and time, and then click **Next**.
16. Choose the type of installation as you need. The following steps are based on the scenario that **Clean install** is selected.
17. Personalize the server by typing the computer name and then click **Next**.
18. In the “Provide your administrator information (account 1 of 2)” window, type your user name and password, and then click **Next**.

Note: The password must contain at least eight characters and consist of upper case letters, lower case letters, and numbers.

19. In the “Provide your administrator information (account 2 of 2)” window, type your user name and password, and then click **Next**.
20. In the “Keep your server up-to-date automatically” window, configure the settings as you need. Your server will restart several times.
21. When prompted, click **Close**. The installation is completed.

Installing drivers for the Windows Server 2012 Essentials operating system

To install drivers for the Windows Server 2012 Essentials operating system, refer to the related topics.

- “Installing the driver for the chipset” on page 5 .
- “Installing the driver for an Ethernet card” on page 5 .
- “Installing the driver for an onboard graphics card” on page 5 .
- “Installing the driver for an HBA card” on page 6 .
- “Installing the driver for Intel Management Engine Interface” on page 6 .
- “Installing the driver for a CNA card” on page 6 .

Installing a Microsoft Windows Server 2012 R2 operating system

This topic provides instructions on how to install the following operating systems:

- Microsoft Windows Server 2012 R2 Datacenter Edition
- Microsoft Windows Server 2012 R2 Standard Edition

This topic also provides instructions on how to install device drivers for the operating system.

Installing a Microsoft Windows Server 2012 R2 operating system

To install a Microsoft Windows Server 2012 R2 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the message Press any key to boot from CD or DVD... is displayed, press any key. The message Windows is loading files... is displayed. If the message Windows Setup [EMS Enabled] is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the Windows Server 2012 R2 window is displayed, configure the language and other options as you need, and then click **Next**.
4. Click **Install now**.

5. Select the Windows operation system edition that you want to install. Then click **Next**. The following steps are based on the scenario that **Windows Server 2012 R2 Standard (Server with a GUI)** is selected in this step.
6. Read the license terms and select **I accept the license terms**. Then click **Next**.
7. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install Windows only (Advanced)** is selected in this step.
8. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**. Then, click **New**.
9. Type the amount of space (in MB), and then click **Apply**. The Windows Setup window is displayed.
10. Click **OK**.
11. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

Note: Your server will restart several times during the installation.

12. When the Settings window is displayed, set an administrator password and click **Finish**. Then, follow the instructions on the screen to sign in when prompted.

Note: The password must be a combination of upper case letters, lower case letters, and numbers.

Installing the driver for chipset

To install the driver for chipset, do the following:

1. Log in to the operating system and insert the *ThinkServer EasyStartup* DVD into the optical drive. The *ThinkServer EasyStartup* DVD runs automatically.

Note: If the DVD does not run automatically, click **Run launch.exe** in the AutoPlay window.

2. In the “End User License Agreement” window, click **Accept**. The installation window is displayed.
3. Click **Driver Installation**. Then, select your server model from the **Server Model** drop-down list box, and the operating system from the **Operating System** drop-down list box.
4. Select **Intel® Chipset** from the **Please Select Driver** drop-down list box.
5. Click **Install**. The Welcome to the Setup Program window is displayed.

Note: If prompted, click **Yes**.

6. Click **Next**. The License Agreement window is displayed.
7. Click **Yes**. The Readme File Information window is displayed.
8. Click **Next**.
9. When the Setup Progress window is displayed, click **Next**.
10. When the installation completes, select **Yes, I want to restart this computer now**. Then, click **Finish** to restart your server.

Installing the driver for an onboard graphics card

To install the driver for an onboard graphics card, do the following:

1. Log in to the operating system and insert the *ThinkServer EasyStartup* DVD into the optical drive. The *ThinkServer EasyStartup* DVD runs automatically.

Note: If the DVD does not run automatically, click **Run launch.exe** in the AutoPlay window.

2. In the “End User License Agreement” window, click **Accept**. The installation window is displayed.
3. Click **Driver Installation**. Then, select your server model from the **Server Model** drop-down list box, and the operating system from the **Operating System** drop-down list box.

4. Select **ASPEED Display Controller (AST2300)** from the **Please Select Driver** drop-down list box.
5. Click **Install**.
6. In the Message from webpage window, click **OK** to restart your server.

Installing the driver for an Ethernet card

To install the driver for an Ethernet card, do the following:

1. Log in to the operating system and insert the *ThinkServer EasyStartup* DVD into the optical drive. The *ThinkServer EasyStartup* DVD runs automatically.

Note: If the DVD does not run automatically, click **Run launch.exe** in the AutoPlay window.

2. In the “End User License Agreement” window, click **Accept**. The installation window is displayed.
3. Click **Driver Installation**. Then, select your server model from the **Server Model** drop-down list box, and the operating system from the **Operating System** drop-down list box.
4. Select **Intel® I350 Gigabit Network Connection** from the **Please Select Driver** drop-down list box.
5. Click **Install**.
6. In the Message from webpage window, click **OK** to restart your server.

Installing the driver for an HBA card

This topic provides instructions on how to install the driver for an HBA card.

To install the driver for an HBA card, do the following:

1. Download the driver for an HBA card from the Lenovo Web site to your server. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at: <http://www.lenovo.com/drivers>
2. Double-click the EXE file to unzip it to a folder. Copy the folder to your USB storage device and connect the USB storage device to your server.
3. Log in to the operating system.
4. In the Device Manager window, right-click the HBA card which you need to install drivers for.
5. Click **Update Driver Software → Browse my computer for driver software**.
6. Go to the folder where the driver is stored, click **OK**, and then click **Next**.

Note: If prompted, select **Always trust software from Qlogic Corporation** and click **Install**.

7. When the installation completes, click **Close**.

Installing the driver for a CNA card

The driver for a CNA card is installed during the operating system installation.

Installing the driver for Intel Management Engine Interface

To install the driver for Intel Management Engine Interface, do the following:

1. Log in to the operating system and insert the *ThinkServer EasyStartup* DVD into the optical drive. The *ThinkServer EasyStartup* DVD runs automatically.

Note: If the DVD does not run automatically, click **Run launch.exe** in the AutoPlay window.

2. In the “End User License Agreement” window, click **Accept**. The installation window is displayed.
3. Click **Driver Installation**. Then, select your server model from the **Server Model** drop-down list box, and the operating system from the **Operating System** drop-down list box.

4. Select **Intel Management Engine Interface** from the **Please Select Driver** drop-down list box.
5. Click **Install**.
6. In the Message from webpage window, click **OK** to restart your server.

Installing the driver for an AHCI

This topic provides instructions on how to install the driver for an Advanced Host Controller Interface (AHCI).

To install the driver for an AHCI, do the following:

1. Download the driver for an AHCI from the Lenovo Web site to a USB storage device. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at: <http://www.lenovo.com/drivers>
2. Double-click the EXE file to unzip it to a folder. Then, connect the USB storage device to your server and copy the driver folder to your server..
3. Log in to the operating system.
4. In the Device Manager window, right-click the AHCI which you need to install drivers for.
5. Click **Update Driver Software → Browse my computer for driver software**.
6. Go to the folder where the driver is stored, click **OK**, and then click **Next**.
7. When the installation completes, click **Close**.

Installing the Microsoft Windows Server 2012 R2 Essentials operating system

This topic provides instructions on how to install the Windows Server 2012 R2 Essentials operating system and the device drivers.

Note: Before installing this operating system, connect your server to the network.

To install the Windows Server 2012 R2 Essentials operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the message Press any key to boot from CD or DVD... is displayed, press any key. The message Windows is loading files... is displayed. If the message Windows Setup [EMS Enabled] is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the Windows Server 2012 R2 window is displayed, configure the language and other options as you need, and then click **Next**.
4. Click **Install now**.
5. Type your product key and then click **Next**. The product key information is available on the Microsoft Certificate of Authenticity label or product packaging.
6. Read the license terms and select **I accept the license terms**. Then click **Next**.
7. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install Windows only (Advanced)** is selected in this step.
8. In the "Where do you want to install Windows?" window, click **Load driver**. The Load driver window is displayed.
9. Connect the USB storage device to your server, and then go to the folder where the driver is stored. Click **OK**. The Select the driver to install window is displayed.
10. Select **Hide drivers that aren't compatible with this computer's hardware**, and then select the driver for the RAID card. Then, click **Next**

11. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**. Then, click **New**.
12. Type the amount of space (in MB), and then click **Apply**. The Windows Setup window is displayed.
13. Click **OK**.
14. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

Note: Your server will restart several times during the installation.

15. When the Settings window is displayed, set an administrator password and click **Finish**. Then, follow the instructions on the screen to sign in when prompted.

Note: The password must be a combination of upper case letters, lower case letters, and numbers.

16. In the “Configure Windows Server Essentials” window, click **Next**.
17. Configure the date and time, and then click **Next**.
18. Configure the company information in the Company information window. Then, click **Next**.
19. Personalize the server and network information as you need. Then, click **Next**.
20. In the “Update settings” window, configure the settings and click **Configure**. The following steps are based on the scenario that **Do not check to updates** is selected in this step. Wait for a few minutes.
21. When prompted, click **Close**. The installation completes.

Installing drivers for Windows Server 2012 R2 Essentials

The driver for a CNA card is installed during the operating system installation.

To install drivers for Windows Server 2012 R2 Essentials, refer to the related topics.

- “Installing the driver for chipset” on page 15.
- “Installing the driver for an onboard graphics card” on page 15.
- “Installing the driver for an Ethernet card” on page 16.
- “Installing the driver for an HBA card” on page 16.
- “Installing the driver for Intel Management Engine Interface” on page 16.
- “Installing the driver for an AHCI” on page 17.

Installing the SUSE Linux Enterprise Server 10 operating system with Service Pack 4

This topic provides instructions on how to install the SUSE Linux Enterprise Server 10 (x64 or x86) operating system with Service Pack 4.

Note: The maximum system memory that the SUSE Linux Enterprise Server 10 (x86) operating system can support is 16 GB.

To install the SUSE Linux Enterprise Server 10 (x64 or x86) operating system with Service Pack 4, do the following:

1. Download the driver for onboard SAS software RAID from the Lenovo Web site to your server. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at: <http://www.lenovo.com/drivers>
2. Copy the driver for onboard SAS software RAID to a USB storage device. Connect the USB storage device to your server.

3. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
4. In the “SUSE Linux Enterprise Server Welcome” window, press F5 and select **Yes**.
5. Type `brokenmodules=iscsi` and select **Installation**. Then, press Enter.
6. In the Driver Update added window, press Enter.
7. When you are prompted to choose the driver update medium, select **Back** and then press Enter.
8. Select your language and keyboard layout and then select **Yes, I Agree to the License Agreement**. Click **Next**.
9. In the Installation Mode window, click **New Installation**, and then click **Next**.
10. Verify your region and time zone, and then click **Next**.
11. When the Installation Settings window is displayed, create a drive partition as you need.
 - Manually create a root partition (/)
To create a root partition, do the following:
 - a. Click **Partitioning** and select **Create Custom Partition Setup**. Click **Next**.
 - b. In the Preparing Hard Disk window, select **Custom Partitioning (for experts)**, and then click **Next**.
 - c. In the Expert Partitioner window, select **Hard Disks → sda** in the **System View** area, and then click **Create**.
 - d. Type the amount of space (in MB or GB) in the **Custom Size** field.
 - e. In the **Format** area, select **Ext3** from the **File system** drop-down list box.
 - f. In the **Mounting Options** area, select the forward slash (/) from the **Mount Point** drop-down list box.
 - g. Click **OK**.
 - Manually create a boot partition (/boot)
To create a boot partition, do the following:
 - a. Click **Partitioning** and select **Create Custom Partition Setup**. Click **Next**.
 - b. In the Preparing Hard Disk window, select **Custom Partitioning (for experts)**, and then click **Next**.
 - c. In the Expert Partitioner window, select **Hard Disks → sda** in the **System View** area, and then click **Create**.
 - d. Type the amount of space (in MB or GB) in the **Custom Size** field.
 - e. In the **Format** area, select **Ext3** from the **File system** drop-down list box.
 - f. In the **Mounting Options** area, select **/boot** from the **Mount Point** drop-down list box.
 - g. Click **OK**.
 - Manually create a swap partition
To create a swap partition, do the following:
 - a. Click **Partitioning** and select **Create Custom Partition Setup**. Click **Next**.
 - b. In the Preparing Hard Disk window, select **Custom Partitioning (for experts)**, and then click **Next**.
 - c. In the Expert Partitioner window, select **Hard Disks → sda** in the **System View** area, and then click **Create**.
 - d. Type the amount of space (in MB or GB) in the **Custom Size** field.
 - e. In the **Format** area, select **Ext3** from the **File system** drop-down list box.
 - f. In the **Mounting Options** area, select **Swap** from the **Mount Point** drop-down list box.
 - g. Click **OK**.

12. Click **Finish**.
13. In the Installation Settings window, click **Software** to select your desired software programs, and then click **OK**.

Note: If you are prompted to verify the changes, click **Accept**.

14. Click **Install** to install the software programs that you have selected.
15. When the Confirm Installation window is displayed, click **Install**. When the installation process is completed, the server restarts automatically.
16. The setup process continues after the server restarts. Set your root user password. Then, select **Next** and press Enter.

Note: The password must contain at least six characters and consist of upper case letters, lower case letters, and numbers.

17. Set your host name and domain name. Then, select **Next** and press Enter.
18. Configure your network in the Network Configuration window. Then, select **Next** and press Enter.

Note: If the Test Internet Connection window is displayed, configure the settings as you need. Then, select **Next** and press Enter.

19. In the Installation Settings window, configure the settings as you need. Select **Next** and press Enter.
20. In the “User Authentication Method” window, configure the settings as you need. Select **Next** and press Enter.
21. In the LDAP Client Configuration window, configure the settings as you need. Select **Next** and press Enter.
22. In the New LDAP User window, configure the settings as you need. Select **Next** and press Enter.
23. In the Release Notes window, select **Next** and then press Enter.
24. In the Hardware Configuration window, select **Next** and then press Enter.
25. In the Installation Completed window, click **Finish**.
26. Follow the instructions on the screen to log in to the operating system.

Installing the driver for an Ethernet card

This topic provides instructions on how to install the driver for an Ethernet card.

To install the driver for an Ethernet card, do the following:

1. Copy the Ethernet card driver from the *ThinkServer EasyStartup* DVD to your local drive. Double-click the EXE file to unzip it to a folder. Copy the folder to your USB storage device and connect the USB storage device to your server.
2. Log in to the operating system and copy the folder from your USB storage device to the `/tmp` directory on your server.
3. Use the following commands to install the driver:

```
cd /tmp
tar zxvf e1000e-x.x.x.x.tar.gz
cd e1000e -x.x.x.x /src
make install
```

Note: In the command lines, `e1000e -x.x.x.x` represents the name of the driver file. Use the corresponding file name on your server.

4. Restart your server and click **Computer** on the lower left corner.
5. Click **YaST**.

6. In the YaST Control Center window, click **Network Devices → Network card**.
7. In the Network Setup Method window, select **User Controlled with NetworkManager** and click **Next**.
8. Choose an Ethernet card as you need and click **Edit**.
9. In the Network Address Setup window, select **Static Address Setup** and configure the settings as you need. Then, click **Next**.
10. Configure other Ethernet cards if needed. Click **Finish** to complete the Ethernet card configuration.

Installing the driver for an onboard graphics card

This topic provides instructions on how to install the driver for an onboard graphics card.

To install the driver for an onboard graphics card, do the following:

1. Copy the onboard graphics card driver from the *ThinkServer EasyStartup* DVD to your local drive. Double-click the EXE file to unzip it to a folder. Copy the folder to your USB storage device and connect the USB storage device to your server.
2. Log in to the operating system and copy the folder from your USB storage device to the /tmp directory on your server.
3. Use the following commands to install the driver:

```
cd /tmp
cd /xorg69
rpm -ivh xorg69-0.96-0.x86.rpm
```

Note: In the command lines, *xorg69* represents the name of the driver package file and *xorg69-0.96-0.x86.rpm* represents the driver name. Use the corresponding file name on your server.
4. Restart your server.

Installing the driver for an HBA card

This topic provides instructions on how to install the driver for an HBA card.

To install the driver for an HBA card, do the following:

1. Copy the HBA card driver from the *ThinkServer EasyStartup* DVD to your local drive. Double-click the EXE file to unzip it to a folder. Copy the folder to your USB storage device and connect the USB storage device to your server.
2. Log in to the operating system and copy the folder from your USB storage device to the /tmp directory on your server.
3. Use the following commands to install the driver:

```
cd /tmp
tar zxvf elx-lpfc-dd-rhel6-8.3.7.18-1-1.tar.gz
cd elx-lpfc-dd-rhel6-8.3.7.18-1-1
chmod u+x *
./elx_lpfc_install.sh
```

Notes:

 - If the file extension is not .tar.gz, skip the second command.
 - In the command lines, *elx-lpfc-dd-rhel6-8.3.7.18-1-1* represents the name of the driver package file and *elx_lpfc_install.sh* represents the driver name. Use the corresponding file name on your server.
4. Restart your server.

Installing the driver for a CNA card

This topic provides instructions on how to install the driver for a CNA card.

To install the driver for a CNA card, do the following:

1. Copy the CNA card driver from the *ThinkServer EasyStartup* DVD to your local drive. Unzip the driver file to a folder. Copy the folder to your USB storage device and connect the USB storage device to your server.
2. Log in to the operating system and copy the folder from your USB storage device to the `/tmp` directory on your server.
3. Use the following commands to install the driver:

- For Fibre Channel over Ethernet (FCoE) and iSCSI over Ethernet (ISOE) protocols:

```
cd /tmp
cd qla2xxx-src-v8.05.00.03.06.0-k
chmod u+x *
./build.sh
```

Note: In the command lines, *qla2xxx-src-v8.05.00.03.06.0-k* represents the name of the driver package file and *build.sh* represents the driver name. Use the corresponding file name on your server.

- For NIC protocol:

```
cd /tmp
cd qlcnic-5.2.29.45
chmod u+x *
./qlcnic-src-install.sh -i
```

Note: In the command lines, *qlcnic-5.2.29.45* represents the name of the driver package file and *qlcnic-src-install.sh* represents the driver name. Use the corresponding file name on your server.

4. Restart your server.

Installing the SUSE Linux Enterprise Server 11 operating system with Service Pack 2

This topic provides instructions on how to install the SUSE Linux Enterprise Server 11 (x64 or x86) operating system with Service Pack 2.

Note: The maximum system memory that the SUSE Linux Enterprise Server 11 (x86) operating system can support is 16 GB.

To install the SUSE Linux Enterprise Server 11 (x64 or x86) operating system with Service Pack 2, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. Connect the USB storage device that contains the driver for the onboard SAS software RAID to your server.
3. In the “SUSE Linux Enterprise Server Welcome” window, press F6 and select **Yes**.

Note: If you are installing the SUSE Linux Enterprise Server 11 (x86) operating system with Service Pack 2 and your server is installed with an X540 Ethernet card or two X520 Ethernet cards, use the following command:

```
brokenmodules=isci
```

4. Select **Installation** and press Enter.
5. In the Driver Updates added window, select **OK** and press Enter.

6. In the “Please choose the Driver Update medium” window, click **OK** and press Enter. After the driver is installed, click **Back**.
7. Select your language and keyboard layout and then select **I Agree to the license terms**. Click **Next**.
8. When the Media Check window prompts you to check all the installation media, depending on your needs, click **Start Check** to do the check or click **Next** to skip the check.
9. In the Installation Mode window, click **New Installation**, and then click **Next**.
10. Verify your region and time zone, and then click **Next**.
11. In the Server Base Scenario window, select **Physical Machine (also for Fully Virtualized Guests)**, and then click **Next**.
12. When the Installation Settings window is displayed, create a drive partition as you need.
 - Manually create a root partition (/)
To create a root partition, do the following:
 - a. Click **Partitioning**.
 - b. In the Preparing Hard Disk window, select **Custom Partitioning (for experts)**, and then click **Next**.
 - c. In the Expert Partitioner window, select **Hard Disks → sda** in the **System View** area, and then click **Add**.
 - d. Type the amount of space (in MB or GB) in the **Custom Size** field, and then click **Next**.
 - e. In the **Formatting Options** area, select **Ext3** from the **File system** drop-down list box.
 - f. In the **Mounting Options** area, select the forward slash (/) from the **Mount Point** drop-down list box.
 - g. Click **Finish**.
 - h. Click **Accept**.
 - Manually create a boot partition (/boot)
To create a boot partition, do the following:
 - a. Click **Partitioning**.
 - b. In the Preparing Hard Disk window, select **Custom Partitioning (for experts)**, and then click **Next**.
 - c. In the Expert Partitioner window, select **Hard Disks → sda** in the **System View** area, and then click **Add**.
 - d. Type the amount of space (in MB or GB) in the **Custom Size** field, and then click **Next**.
 - e. In the **Formatting Options** area, select **Ext3** from the **File system** drop-down list box.
 - f. In the **Mounting Options** area, select **/boot** from the **Mount Point** drop-down list box.
 - g. Click **Finish**.
 - h. Click **Accept**.
 - Manually create a swap partition
To create a swap partition, do the following:
 - a. Click **Partitioning**.
 - b. In the Preparing Hard Disk window, select **Custom Partitioning (for experts)**, and then click **Next**.
 - c. In the Expert Partitioner window, select **Hard Disks → sda** in the **System View** area, and then click **Add**.
 - d. Type the amount of space (in MB or GB) in the **Custom Size** field, and then click **Next**.
 - e. In the **Formatting Options** area, select **Ext3** from the **File system** drop-down list box.
 - f. In the **Mounting Options** area, select **Swap** from the **Mount Point** drop-down list box.
 - g. Click **Finish**.

- h. Click **Accept**.
13. In the Installation Settings window, click **Software** to select your desired software programs, and then click **OK**.
- Note:** If you are prompted to verify the changes, click **Accept**.
14. Click **Install** to install the software programs that you have selected.
15. When the Confirm Installation window is displayed, click **Install**. When the installation process is completed, the server restarts automatically.
16. The setup process continues after the server restarts. Set your root user password. Then, select **Next** and press Enter.
- Note:** The password must contain at least six characters and consist of upper case letters, lower case letters, and numbers.
17. Set your host name and domain name. Then select **Next** and press Enter.
18. Configure your network in the Network Configuration window. Then select **Next** and press Enter.
- Note:** If the Test Internet Connection window is displayed, configure the setting as you need. Then select **Next** and press Enter.
19. In the Network Services Configuration window, select **Next** and press Enter.
- Note:** If there is an error in the CA Management window, select **Do Not Create CA and Certificate** and click **Next**.
20. In the “User Authentication Method” window, configure the settings as you need. Select **Next** and press Enter.
21. In the LDAP Client Configuration window, configure the settings as you need. Select **Next** and press Enter.
22. In the New LDAP User window, configure the settings as you need. Select **Next** and press Enter.
23. In the Release Notes window, select **Next** and then press Enter.
24. In the Hardware Configuration window, select **Next** and then press Enter.
25. In the Installation Completed window, click **Finish**.
26. Follow the instructions on the screen to log in to the operating system.

Installing drivers for the SUSE Linux Enterprise Server 11 operating system with Service Pack 2

To install drivers for the SUSE Linux Enterprise Server 11 operating system with Service Pack 2, refer to the related topics.

- “Installing the driver for an onboard graphics card” on page 21.
- “Installing the driver for an HBA card” on page 21.
- “Installing the driver for a CNA card” on page 22.

To install the driver for an Ethernet card, do the following:

1. Copy the Ethernet card driver from the *ThinkServer EasyStartup* DVD to your local drive. Double-click the EXE file to unzip it to a folder. Copy the folder to your USB storage device and connect the USB storage device to your server.
2. Log in to the operating system and copy the folder from your USB storage device to the `/tmp` directory on your server.
3. Use the following commands to install the driver:

```
cd /tmp
tar zxvf ixgbe-x.x.x.x.tar.gz
cd igb -x.x.x.x /src
```

```
make install
```

Note: In the command lines, *igb -x.x.x.x* represents the name of the driver file. Use the corresponding file name on your server.

4. Restart your server and click **Computer** on the lower left corner.
5. Click **YaST**.
6. In the YaST Control Center window, click **Network Devices → Network Settings**.
7. Choose an Ethernet card as you need and click **Edit**.
8. In the Network Card Setup window, select **Statically assigned IP Address** and configure the settings as you need. Then, click **Next**.
9. Configure other Ethernet cards if needed. Click **OK** to complete the Ethernet card configuration.

If you are installing the SUSE Linux Enterprise Server 11 (x64) operating system with Service Pack 2, you also need to install the driver for the virtual kernel. To install the driver for the virtual kernel, do the following:

1. Copy the driver for the virtual kernel from the *ThinkServer EasyStartup* DVD to your USB storage device and connect the USB storage device to your server.
2. Log in to the operating system and copy the folder from your USB storage device to the `/tmp` directory on your server.
3. Right-click the `tmp` folder and select **Open in Terminal**. The Terminal window is displayed.
4. Type the following commands into the text box to install the driver.

```
cd /tmp
cd install
rpm -ivh lsi-megasr-kmp-xen-15.02.2013.0414-1_3.0.13-0.27.x86_64.rpm
```

Note: In the command lines, *lsi-megasr-kmp-xen-15.02.2013.0414-1_3.0.13-0.27.x86_64* represents the name of the driver file. Use the corresponding file name on your server.

5. Restart your server and log in to the virtual kernel after the installation process is completed.

Installing the SUSE Linux Enterprise Server 11 operating system with Service Pack 3

This topic provides instructions on how to install the SUSE Linux Enterprise Server 11 (x64 or x86) operating system with Service Pack 3.

Note: The maximum system memory that the SUSE Linux Enterprise Server 11 (x86) operating system can support is 16 GB.

To install the SUSE Linux Enterprise Server 11 (x64 or x86) operating system with Service Pack 3, do the following:

1. Download the driver for onboard SAS software RAID from the Lenovo Web site to your server. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at: <http://www.lenovo.com/drivers>
2. Copy the driver for onboard SAS software RAID to a USB storage device. Connect the USB storage device to your server.
3. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
4. In the “SUSE Linux Enterprise Server Welcome” window, press F6 and select **Yes**.
5. Type `brokenmodules=iscsi` and select **Installation**. Then, press Enter.

6. In the Driver Update added window, select **OK** press Enter.
7. When you are prompted to choose the driver update medium, select **OK** and then press Enter.
8. When the installation completes, select **Back**.
9. Select your language and keyboard layout and then select **Yes, I Agree to the License Agreement**. Click **Next**.
10. In the Installation Mode window, click **New Installation**, and then click **Next**.
11. Verify your region and time zone, and then click **Next**.
12. In the Server Base Scenario window, select **Physical Machine(Also for Fully Virtualized Guests)** and then click **Next**.
13. When the Installation Settings window is displayed, create a drive partition as you need.
 - Manually create a root partition (/)
To create a root partition, do the following:
 - a. Click **Partitioning** and select **Create Custom Partition Setup**. Click **Next**.
 - b. In the Preparing Hard Disk window, select **Custom Partitioning (for experts)**, and then click **Next**.
 - c. In the Expert Partitioner window, select **Hard Disks → sda** in the **System View** area, and then click **Create**.
 - d. Type the amount of space (in MB or GB) in the **Custom Size** field.
 - e. In the **Format** area, select **Ext3** from the **File system** drop-down list box.
 - f. In the **Mounting Options** area, select the forward slash (/) from the **Mount Point** drop-down list box.
 - g. Click **OK**.
 - Manually create a boot partition (/boot)
To create a boot partition, do the following:
 - a. Click **Partitioning** and select **Create Custom Partition Setup**. Click **Next**.
 - b. In the Preparing Hard Disk window, select **Custom Partitioning (for experts)**, and then click **Next**.
 - c. In the Expert Partitioner window, select **Hard Disks → sda** in the **System View** area, and then click **Create**.
 - d. Type the amount of space (in MB or GB) in the **Custom Size** field.
 - e. In the **Format** area, select **Ext3** from the **File system** drop-down list box.
 - f. In the **Mounting Options** area, select **/boot** from the **Mount Point** drop-down list box.
 - g. Click **OK**.
 - Manually create a swap partition
To create a swap partition, do the following:
 - a. Click **Partitioning** and select **Create Custom Partition Setup**. Click **Next**.
 - b. In the Preparing Hard Disk window, select **Custom Partitioning (for experts)**, and then click **Next**.
 - c. In the Expert Partitioner window, select **Hard Disks → sda** in the **System View** area, and then click **Create**.
 - d. Type the amount of space (in MB or GB) in the **Custom Size** field.
 - e. In the **Format** area, select **Swap** from the **File system** drop-down list box.
 - f. In the **Mounting Options** area, select **Swap** from the **Mount Point** drop-down list box.
 - g. Click **OK**.
14. Click **Finish**.

15. In the Installation Settings window, click **Software** to select your desired software programs, and then click **OK**.

Note: If you are prompted to verify the changes, click **Accept**.

16. Click **Install** to install the software programs that you have selected.
17. When the Confirm Installation window is displayed, click **Install**. When the installation process is completed, the server restarts automatically.
18. The setup process continues after the server restarts. Set your root user password. Then, select **Next** and press Enter.

Note: The password must contain at least six characters and consist of upper case letters, lower case letters, and numbers.

19. Set your host name and domain name. Then, select **Next** and press Enter.
20. Configure your network in the Network Configuration window. Then, select **Next** and press Enter.

Note: If the Test Internet Connection window is displayed, configure the settings as you need. Then, select **Next** and press Enter.

21. In the “User Authentication Method” window, configure the settings as you need. Select **Next** and press Enter.
22. In the LDAP Client Configuration window, configure the settings as you need. Select **Next** and press Enter.
23. In the New LDAP User window, configure the settings as you need. Select **Next** and press Enter.
24. In the Release Notes window, select **Next** and then press Enter.
25. In the Hardware Configuration window, select **Next** and then press Enter.
26. In the Installation Completed window, click **Finish**.
27. Follow the instructions on the screen to log in to the operating system.

Installing drivers for an Ethernet card

To install the driver for an Ethernet card, do the following:

1. Copy the Ethernet card driver from the *ThinkServer EasyStartup* DVD to a USB storage device. Double-click the EXE file to unzip it to a folder. Connect the USB storage device to your server.
2. Log in to the operating system and copy the folder from your USB storage device to the /tmp directory on your server.
3. Use the following commands to install the driver:

```
cd /tmp
tar zxvf igb-4.3.1.tar.gz
cd igb-4.3.1 /src
make install
```

Note: If the file extension is not .tar.gz, skip the second command.

4. Restart your server and click **Computer** on the lower left corner.
5. Click **YaST**.
6. In the YaST Control Center window, click **Network Devices → Network Settings**.
7. Choose an Ethernet card as you need and click **Edit**.
8. In the Network Card Setup window, select **Statically assigned IP Address** and configure the settings as you need. Then, click **Next**.
9. Configure other Ethernet cards if needed. Click **OK** to complete the Ethernet card configuration.

Installing drivers for an onboard graphics card

To install a driver for an onboard graphics card, do the following:

1. Copy an onboard graphics card driver from the *ThinkServer EasyStartup* DVD to a USB storage device. Double-click the EXE file to unzip it to a folder. Connect the USB storage device to your server.
2. Log in to the operating system and copy the folder from your USB storage device to the `/tmp` directory on your server.
3. Use the following commands to install the driver:

```
cd /tmp
cd xorg75
./update.sh
```

Note: In the command lines, `xorg75` represents the name of the driver folder. Use the corresponding file name on your server.

4. Restart your server.

Installing the driver for an HBA card

The driver for an HBA card is installed during the operating system installation.

Installing the driver for a CNA card

The driver for a CNA card is installed during the operating system installation.

Installing the Red Hat Enterprise Linux AS 5.9 operating system and drivers

This topic provides instructions on how to install the Red Hat Enterprise Linux AS 5.9 (x64 or x86) operating system and drivers.

Notes:

- The maximum system memory that the Red Hat Enterprise Linux AS 5.9 (x86) operating system can support is 16 GB.
- The driver for the Ethernet card is installed during the operating system installation.
- Download the driver for onboard SAS software RAID from the Lenovo Web site to your server. Then, copy the driver to a USB storage device. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at:
<http://www.lenovo.com/drivers>

To install the Red Hat Enterprise Linux AS 5.9 (x64 or x86) operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the welcome window is displayed, input the following command line after `boot:`, and then press Enter:

```
linux dd noprobe=ata1 noprobe=ata2 noprobe=ata3 noprobe=ata4
```
3. In the Driver disk window, select **Yes** and then press Enter.
4. In the Insert Driver Disk window, select **OK** and then press Enter.
5. In the More Driver Disks window, select **No**.
6. In the CD Found window, depending on your needs, select **OK** to begin the installation media test or select **Skip** to skip the media test and start the installation. Press Enter.
7. When the installation window is displayed, click **Next**.

8. Select the language that you want to use during the installation process and click **Next**.
9. Select the appropriate keyboard layout for the system and click **Next**.
10. When prompted to type the installation number, type your installation number in the **Installation Number** field and then click **OK**. The installation number enables the automatic installation of some software programs such as the storage clustering programs and the virtualization programs.

Notes:

- Click **Yes** if a warning message is displayed.
 - When the “Install Red Hat Enterprise Linux Server” window is displayed, configure the options as you need and press Enter. The following steps are based on the scenario that **Install Red Hat Enterprise Linux Server** is selected in this step.
11. When you are prompted to partition your hard disk drive, select the option as you need and then click **Next**.

Note: The following steps are based on the scenario that **Create custom layout** is selected in this step.
 12. Create a partition as you need and then click **Next**.
 - Manually create a root partition (/)
To create a root partition, do the following:
 - a. Click **New**.
 - b. In the Add Partition window, select the forward slash (/) from the **Mount Point** drop-down list box.
 - c. Select **ext3** from the **File System Type** drop-down list box.
 - d. Type the amount of space (in MB) in the **Size** field, and then click **OK**.
 - Manually create a boot partition (/boot)
To create a boot partition, do the following:
 - a. Click **New**.
 - b. In the Add Partition window, select **/boot** from the **Mount Point** drop-down list box.
 - c. Select **ext3** from the **File System Type** drop-down list box.
 - d. Type the amount of space (in MB) in the **Size** field, and then click **OK**.
 - Manually create a swap partition
To create a swap partition, do the following:
 - a. Click **New**.
 - b. In the Add Partition window, select **swap** from the **File System Type** drop-down list box.
 - c. Type the amount of space (in MB) in the **Size** field, and then click **OK**.
 13. In the GRUB boot loader window, configure the settings as you need and then click **Next**.
 14. In the Network Devices window, select the device that you want to activate when you start the server, and then click **Next**.
 15. Select your region and then click **Next**.
 16. Set your root password and then click **Next**. The root account is for administrative use.
 17. The default installation includes a set of software programs applicable for general Internet usage. Select **Customize later** or **Customize now** to add additional software programs to your server, and then click **Next**.

Note: If you select **Customize now**, you can select the desired software packages by clicking **Optional packages**. Then, click **Next**.

18. Click **Next** to begin the installation process of the Red Hat Enterprise Linux Server operating system.

19. When the installation is completed, remove the operating system installation disc from the optical drive.
20. Press Ctrl+Alt+F2 to go to the command window and then use the following commands to install the drivers:

```
cat /proc/partitions
mkdir /tmp/fd0
mount /dev/sdb /tmp/fd0
cd tmp/fd0
./replace_ahci.sh
```
- Notes:**
 - Ensure that the USB storage device is connected to your server.
 - In the command lines, *sdb* represents the drive letter of the USB storage device.
21. Press Ctrl+Alt+F6 to return to the graphics interface. Then, click **Reboot** to restart your server.
22. The setup process continues after the server restarts. In the Welcome window, click **Forward**.
23. Click **Yes, I agree to the License Agreement**, and then click **Forward**.
24. In the Firewall window, check and configure the settings as you need, and then click **Forward**.
25. In the SELinux window, check and configure the settings as you need, and then click **Forward**.
26. In the Kdump window, configure the settings as you need, and then click **Forward**.
27. Set your time and date, and then click **Forward**.
28. In the Set Up Software Updates window, configure the settings as you need, and then click **Forward**.
29. In the Finish Update Setup window, click **Forward**.
30. Set your user name and password in the Create User window, and then click **Forward**.
31. When the Additional CDs window is displayed asking you if you need to install additional software programs from a CD or DVD, depending on your needs, click **Install** to continue or click **Finish** to complete the installation.
32. Enter your user name and password to log in to the operating system.

Installing the driver for an onboard graphics card

To install the driver for an onboard graphics card, do the following:

1. Copy the driver for an onboard graphics card from the *ThinkServer EasyStartup* DVD to your local drive. Double-click the EXE file to unzip it to a folder. Copy the folder to your USB storage device and connect the USB storage device to your server.
2. Log in to the operating system and copy the folder from your USB storage device to the */tmp* directory on your server.
3. Use the following commands to install the driver:

```
cd /tmp
cd /xorg71
rpm -ivh xorg71-0.97-5.i386.rpm
```

Note: In the command lines, *xorg71* represents the name of the driver package file and *xorg71-0.97-5.i386.rpm* represents the driver name. Use the corresponding file name on your server.

4. Restart your server.

Installing the driver for an HBA card

To install the driver for an HBA card, do the following:

1. Copy the HBA card driver from the *ThinkServer EasyStartup* DVD to your local drive. Double-click the EXE file to unzip it to a folder. Copy the folder to your USB storage device and connect the USB storage device to your server.
2. Log in to the operating system and copy the folder from your USB storage device to the `/tmp` directory on your server.
3. Use the following commands to install the driver:

```
cd /tmp
tar zxvf elx-lpfc-dd-rhel6-8.3.7.18-1-1.tar.gz
cd elx-lpfc-dd-rhel6-8.3.7.18-1-1
./elx_lpfc_install.sh
```

Notes:

- If the file extension is not `.tar.gz`, skip the second command.
 - In the command lines, `elx-lpfc-dd-rhel6-8.3.7.18-1-1` represents the name of the driver package file and `elx_lpfc_install.sh` represents the driver name. Use the corresponding file name on your server.
4. Restart your server.

Installing the driver for a CNA card

To install the driver for a CNA card, do the following:

1. Copy the driver for a CNA card from the *ThinkServer EasyStartup* DVD to your local drive. Double-click the EXE file to unzip it to a folder. Copy the folder to your USB storage device and connect the USB storage device to your server.
2. Log in to the operating system and copy the folder from your USB storage device to the `/tmp` directory on your server.
3. Use the following commands to install the driver:

- For Fibre Channel over Ethernet (FCoE) and iSCSI over Ethernet (ISOE) protocols:


```
cd /tmp
cd qla2xxx-src-v8.05.00.03.06.0-k
./build.sh
```

Note: In the command lines, `qla2xxx-src-v8.05.00.03.06.0-k` represents the name of the driver package file and `build.sh` represents the driver name. Use the corresponding file name on your server.

- For NIC protocol:


```
cd /tmp
cd qlcnlc-5.2.29.45
./qlcnlc-src-install.sh -i
```

Note: In the command lines, `qlcnlc-5.2.29.45` represents the name of the driver package file and `qlcnlc-src-install.sh` represents the driver name. Use the corresponding file name on your server.

4. Restart your server.

Installing the Red Hat Enterprise Linux AS 5.10 operating system and drivers

This topic provides instructions on how to install the Red Hat Enterprise Linux AS 5.10 (x64 or x86) operating system and drivers.

Notes:

- The maximum system memory that the Red Hat Enterprise Linux AS 5.10 (x86) operating system can support is 16 GB.
- The driver for the Ethernet card is installed during the operating system installation.
- Download the driver for onboard SAS software RAID from the Lenovo Web site to your server. Then, copy the driver to a USB storage device. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at:
<http://www.lenovo.com/drivers>

To install the Red Hat Enterprise Linux AS 5.10 (x64 or x86) operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the welcome window is displayed, press Tab and input the following command line after boot:, and then press Enter:
`linux dd blocklist=iscsi noprobe=ata2 noprobe=ata3 noprobe=ata4`
3. In the Driver disk window, select **Yes** and then press Enter.
4. In the Insert Driver Disk window, select **OK** and then press Enter.
5. In the More Driver Disks window, select **No**.
6. In the CD Found window, depending on your needs, select **OK** to begin the installation media test or select **Skip** to skip the media test and start the installation. Press Enter.
7. When the installation window is displayed, click **Next**.
8. Select the language that you want to use during the installation process and click **Next**.
9. Select the appropriate keyboard layout for the system and click **Next**.
10. When prompted to type the installation number, type your installation number in the **Installation Number** field and then click **OK**. The installation number enables the automatic installation of some software programs such as the storage clustering programs and the virtualization programs.

Notes:

- Click **Yes** if a warning message is displayed.
 - When the “Install Red Hat Enterprise Linux Server” window is displayed, configure the options as you need and press Enter. The following steps are based on the scenario that **Install Red Hat Enterprise Linux Server** is selected in this step.
11. When you are prompted to partition your hard disk drive, select the option as you need and then click **Next**.

Note: The following steps are based on the scenario that **Create custom layout** is selected in this step.

12. Create a partition as you need and then click **Next**.
 - Manually create a root partition (/)
To create a root partition, do the following:
 - a. Click **New**.
 - b. In the Add Partition window, select the forward slash (/) from the **Mount Point** drop-down list box.
 - c. Select **ext3** from the **File System Type** drop-down list box.
 - d. Type the amount of space (in MB) in the **Size** field, and then click **OK**.
 - Manually create a boot partition (/boot)
To create a boot partition, do the following:
 - a. Click **New**.

- b. In the Add Partition window, select **/boot** from the **Mount Point** drop-down list box.
- c. Select **ext3** from the **File System Type** drop-down list box.
- d. Type the amount of space (in MB) in the **Size** field, and then click **OK**.
- Manually create a swap partition
To create a swap partition, do the following:
 - a. Click **New**.
 - b. In the Add Partition window, select **swap** from the **File System Type** drop-down list box.
 - c. Type the amount of space (in MB) in the **Size** field, and then click **OK**.
- 13. In the GRUB boot loader window, configure the settings as you need and then click **Next**.
- 14. In the Network Devices window, select the device that you want to activate when you start the server, and then click **Next**.
- 15. Select your region and then click **Next**.
- 16. Set your root password and then click **Next**. The root account is for administrative use.
- 17. The default installation includes a set of software programs applicable for general Internet usage. Select **Customize later** or **Customize now** to add additional software programs to your server, and then click **Next**.

Note: If you select **Customize now**, you can select the desired software packages by clicking **Optional packages**. Then, click **Next**.

- 18. Click **Next** to begin the installation process of the Red Hat Enterprise Linux Server operating system.
- 19. When the installation is completed, remove the operating system installation disc from the optical drive.
- 20. Press Ctrl+Alt+F2 to go to the command window and then use the following commands to install the drivers:


```
cat /proc/partitions
mkdir /tmp/fd0
mount /dev/sdb /tmp/fd0
cd tmp/fd0
./replace_ahci.sh
```

Notes:

- Ensure that the USB storage device is connected to your server.
- In the command lines, *sdb* represents the drive letter of the USB storage device.
- 21. Press Ctrl+Alt+F6 to return to the graphics interface. Then, click **Reboot** to restart your server.
- 22. The setup process continues after the server restarts. In the Welcome window, click **Forward**.
- 23. Click **Yes, I agree to the License Agreement**, and then click **Forward**.
- 24. In the Firewall window, check and configure the settings as you need, and then click **Forward**.
- 25. In the SELinux window, check and configure the settings as you need, and then click **Forward**.
- 26. In the Kdump window, configure the settings as you need, and then click **Forward**.
- 27. Set your time and date, and then click **Forward**.
- 28. In the Set Up Software Updates window, configure the settings as you need, and then click **Forward**.
- 29. In the Finish Update Setup window, click **Forward**.
- 30. Set your user name and password in the Create User window, and then click **Forward**.
- 31. When the Additional CDs window is displayed asking you if you need to install additional software programs from a CD or DVD, depending on your needs, click **Install** to continue or click **Finish** to complete the installation.

32. Enter your user name and password to log in to the operating system.

Installing drivers for an Ethernet card

Note: The drivers for an Ethernet card comes with the operating system.

To configure the Ethernet card, do the following:

1. Log in to the operating system
2. In the graphics interface, click **System** on the top left corner and then select **Network** from the **Administration** menu.
3. Choose an Ethernet card as you need and click **Edit**.
4. In the Ethernet Device window, select **Statically set IP Address** and configure the settings as you need. Then, click **OK**.
5. Go back to the graphics interface and then click **Activate**.
6. In the **System-config-network** window, click **Yes** and then click **OK**.

Installing drivers for an onboard graphics card

To install a driver for an onboard graphics card, do the following:

1. Copy an onboard graphics card driver from the *ThinkServer EasyStartup* DVD to a USB storage device. Double-click the EXE file to unzip it to a folder. Connect the USB storage device to your server.
2. Log in to the operating system and copy the folder from your USB storage device to the `/tmp` directory on your server.
3. Use the following commands to install the driver:

```
cd /tmp
cd xorg71
./update.sh
```

Note: In the command lines, *xorg71* represents the name of the driver folder. Use the corresponding file name on your server.

4. Restart your server.

Installing the driver for an HBA card

The driver for an HBA card is installed during the operating system installation.

Installing the driver for a CNA card

The driver for a CNA card is installed during the operating system installation.

Installing the Red Hat Enterprise Linux AS 6.4 operating system

This topic provides instructions on how to install the Red Hat Enterprise Linux AS 6.4 (x64 or x86) operating system. Before installing the Red Hat Enterprise Linux AS 6.4 (x64) operating system, do the following:

1. Start the Setup Utility program.
2. On the **Advanced** menu, select **Chipset Configuration** **Intel VT-d**. Ensure that **Intel VT-d** is set to **Disabled**.

Note: The maximum system memory that the Red Hat Enterprise Linux AS 6.4 (x86) operating system can support is 16 GB.

To install the Red Hat Enterprise Linux AS 6.4 (x64 or x86) operating system, do the following:

1. Download the driver for onboard SAS software RAID from the Lenovo Web site to your server. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at: <http://www.lenovo.com/drivers>
2. Copy the driver for onboard SAS software RAID to a USB storage device. Connect the USB storage device to your server.
3. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
4. When the welcome window is displayed, select the option as you need.

Note: The following steps are based on the scenario that **Install or upgrade an existing system** is selected in this step.

5. Press Tab and type `linux dd blacklist=iscsi nodmraid`. Then, press Enter.
6. In the Driver disk window, select **Yes** and then press Enter.
7. In the Driver disk window, go to the folder where the driver is stored and select **OK**. Then, press Enter.
8. In the Insert Driver Disk window, select **OK** and then press Enter.
9. In the More Driver Disks window, select **No**.
10. In the Disc Found window, select **Skip**, and then press Enter.
11. In the installation window, click **Next**.
12. In the RED HAT window, click **Next**.
13. Select the language that you want to use during the installation process and click **Next**.
14. Select the appropriate keyboard layout for the system and click **Next**.
15. Select the type of devices for the installation and then click **Next**.

Notes:

- The following steps are based on the scenario that **Basic Storage Devices** is selected in this step.
 - When prompted, select the option as you need. The following steps are based on the scenario that you select **Fresh installation** and then click **Next**.
16. Type a name for your server. Then, click **Next**.
 17. Specify your time zone by selecting the nearest city in your time zone. Then, click **Next**.
 18. Personalize the server by typing the root password for the root user account. Then, click **Next**.

Note: If a message prompts you that the password is weak, click **Use Anyway**.

19. By default, a partition is already selected for you to install the operating system. If you want to create a partition manually, select the option as you need and then click **Next**.

Note: The following steps are based on the scenario that **Create Custom Layout** is selected in this step.

20. In the Please Select A Device window, do one of the following to create a partition and then click **Next**.
 - Manually create a root partition (/)
To create a root partition, do the following:
 - a. Click **Create**. The Create Storage window is displayed.
 - b. Select **Standard Partition** and then click **Create**.
 - c. In the Add Partition window, select the forward slash (/) from the **Mount Point** drop-down list box.
 - d. Select **ext4** from the **File System Type** drop-down list box.
 - e. In the Allowable Drivers window, select the hard disk drive on which you want to install the operating system.

- f. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.
- Manually create a boot partition (/boot)

To create a boot partition, do the following:

 - a. Click **Create**. The Create Storage window is displayed.
 - b. Select **Standard Partition** and then click **Create**.
 - c. In the Add Partition window, select **/boot** from the **Mount Point** drop-down list box.
 - d. Select **ext4** from the **File System Type** drop-down list box.
 - e. In the Allowable Drivers window, select the hard disk drive on which you want to install the operating system.
 - f. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.
- Manually create a swap partition

To create a swap partition, do the following:

 - a. Click **Create**. The Create Storage window is displayed.
 - b. Select **Standard Partition** and then click **Create**.
 - c. In the Add Partition window, select **swap** from the **File System Type** drop-down list box.
 - d. In the Allowable Drivers window, select the hard disk drive on which you want to install the operating system.
 - e. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.
21. In the Format Warnings window, click **Format** to format the hard disk drive.
22. In the “Writing storage configuration to disk” window, click **Write changes to disk**.
23. In the “Boot loader operating system list” window, click **Next**.
24. The default installation is a basic server installation. You can customize your server by selecting a different set of software from the software list or adding additional repositories that you want to use for the software installation. Select **Customize now** or **Customize later**. Then, click **Next**. The installation process begins.

Notes:

- If you select **Customize now**, you can select software installation packages of your choice by clicking **Optional packages** in the window displayed. Then, click **Next**.
 - When selecting software installation packages, do not select the package named `tboot-1.7.0-2.el6.x86_64` Performrms a verified launch using Intel TXT.
25. After the installation is completed, click **Reboot** to restart your server.
 26. The installation continues after the server restarts. In the Welcome window, click **Forward**.
 27. Click **Yes, I agree to the License Agreement** and then click **Forward**.
 28. In the Set Up Software Updates window, configure the settings as you need, and then click **Forward**.
 29. In the Finish Updates Setup window, click **Forward**.
 30. Set your user name and password and then click **Forward**.
 31. Set your time and date and then click **Forward**.
 32. In the Kdump window, select **Enable kdump** if you want to enable kdump, and then click **Finish** to complete the installation.

Note: When prompted to restart the server, click **Yes**.

33. Follow the instructions on the screen to log in to the operating system.

Installing drivers for a Red Hat Enterprise Linux AS 6.4 operating system

This topic provides instructions on how to install drivers for a Red Hat Enterprise Linux AS 6.4 (x64 or x86) operating system.

Note: The drivers for the Ethernet card and onboard graphics card are installed during the operating system installation.

- For instructions on how to install the driver for an HBA card, see “Installing the driver for an HBA card” on page 30.
- For instructions on how to install the driver for a CNA card, see “Installing the driver for a CNA card” on page 31.

Installing the Red Hat Enterprise Linux AS 6.5 operating system

This topic provides instructions on how to install the Red Hat Enterprise Linux AS 6.5 (x64 or x86) operating system.

Note: The maximum system memory that the Red Hat Enterprise Linux AS 6.5 (x86) operating system can support is 16 GB.

To install the Red Hat Enterprise Linux AS 6.5 (x64 or x86) operating system, do the following:

1. Download the driver for onboard SAS software RAID from the Lenovo Web site to your server. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at: <http://www.lenovo.com/drivers>
2. Copy the driver for onboard SAS software RAID to a USB storage device. Connect the USB storage device to your server.
3. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
4. When the welcome window is displayed, select the option as you need.

Note: The following steps are based on the scenario that **Install or upgrade an existing system** is selected in this step.

5. Press Tab and type `linux dd blacklist=isci`. Then, press Enter.
6. In the Driver disk window, select **Yes** and then press Enter.
7. In the Driver disk window, go to the folder where the driver is stored and select **OK**. Then, press Enter.
8. In the Insert Driver Disk window, select **OK** and then press Enter.
9. In the More Driver Disks window, select **No**.
10. In the Disc Found window, select **Skip**, and then press Enter.
11. In the installation window, click **Next**.
12. In the RED HAT window, click **Next**.
13. Select the language that you want to use during the installation process and click **Next**.
14. Select the appropriate keyboard layout for the system and click **Next**.
15. Select the type of devices for the installation and then click **Next**.

Notes:

- The following steps are based on the scenario that **Basic Storage Devices** is selected in this step.
 - When prompted, select the option as you need. The following steps are based on the scenario that you select **Fresh installation** and then click **Next**.
16. Type a name for your server. Then, click **Next**.

17. Specify your time zone by selecting the nearest city in your time zone. Then, click **Next**.
18. Personalize the server by typing the root password for the root user account. Then, click **Next**.

Note: If a message prompts you that the password is weak, click **Use Anyway**.

19. By default, a partition is already selected for you to install the operating system. If you want to create a partition manually, select the option as you need and then click **Next**.

Note: The following steps are based on the scenario that **Create Custom Layout** is selected in this step.

20. In the Please Select A Device window, do one of the following to create a partition and then click **Next**.
 - Manually create a root partition (/)
To create a root partition, do the following:
 - a. Click **Create**. The Create Storage window is displayed.
 - b. Select **Standard Partition** and then click **Create**.
 - c. In the Add Partition window, select the forward slash (/) from the **Mount Point** drop-down list box.
 - d. Select **ext4** from the **File System Type** drop-down list box.
 - e. In the Allowable Drivers window, select the hard disk drive on which you want to install the operating system.
 - f. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.
 - Manually create a boot partition (/boot)
To create a boot partition, do the following:
 - a. Click **Create**. The Create Storage window is displayed.
 - b. Select **Standard Partition** and then click **Create**.
 - c. In the Add Partition window, select **/boot** from the **Mount Point** drop-down list box.
 - d. Select **ext4** from the **File System Type** drop-down list box.
 - e. In the Allowable Drivers window, select the hard disk drive on which you want to install the operating system.
 - f. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.
 - Manually create a swap partition
To create a swap partition, do the following:
 - a. Click **Create**. The Create Storage window is displayed.
 - b. Select **Standard Partition** and then click **Create**.
 - c. In the Add Partition window, select **swap** from the **File System Type** drop-down list box.
 - d. In the Allowable Drivers window, select the hard disk drive on which you want to install the operating system.
 - e. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.
21. In the Format Warnings window, click **Format** to format the hard disk drive.
22. In the “Writing storage configuration to disk” window, click **Write changes to disk**.
23. In the “Boot loader operating system list” window, click **Next**.
24. The default installation is a basic server installation. You can customize your server by selecting a different set of software from the software list or adding additional repositories that you want to use for the software installation. Select **Customize now** or **Customize later**. Then, click **Next**. The installation process begins.

Note: If you select **Customize now**, you can select software installation packages of your choice by clicking **Optional packages** in the window displayed. Then, click **Next**.

25. After the installation is completed, click **Reboot** to restart your server.
26. The installation continues after the server restarts. In the Welcome window, click **Forward**.
27. Click **Yes, I agree to the License Agreement** and then click **Forward**.
28. In the Set Up Software Updates window, configure the settings as you need, and then click **Forward**.
29. In the Finish Updates Setup window, click **Forward**.
30. Set your user name and password and then click **Forward**.
31. Set your time and date and then click **Forward**.
32. In the Kdump window, select **Enable kdump** if you want to enable kdump, and then click **Finish** to complete the installation.

Note: When prompted to restart the server, click **Yes**.

33. Follow the instructions on the screen to log in to the operating system.

Installing drivers for a Red Hat Enterprise Linux AS 6.5 operating system

This topic provides instructions on how to install drivers for a Red Hat Enterprise Linux AS 6.4 (x64 or x86) operating system.

Note: The drivers for an Ethernet card, an HBA card, and a CNA card are installed during the operating system installation.

To install the driver for an onboard graphics card, do the following:

1. Download the driver for onboard graphics card from the Lenovo Web site to a USB storage device. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at: <http://www.lenovo.com/drivers>
2. Double-click the EXE file to unzip it to a folder. Then, connect the USB storage device to your server.
3. Log in to the operating system and copy the folder from your USB storage device to the /tmp directory on your server.
4. Use the following commands to install the driver:

```
cd /tmp
cd /xorg71
./update.sh
```

Note: In the command lines, *xorg71* represents the name of the driver package file. Use the corresponding file name on your server.

5. Restart your server.

Installing the VMware ESXi 5.1 Update 1 hypervisor

This topic provides instructions on how to install the VMware 5.1 Update 1 hypervisor.

Notes:

- The VMware ESXi 5.1 Update 1 hypervisor is not supported on onboard software RAID configuration.
- Follow the instructions on the screen in addition to the instructions in this topic.

To install the VMware ESXi 5.1 Update 1 hypervisor, do the following:

1. Insert the installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the message Press Tab to edit options is displayed, you can press Tab and then edit options as you need. The following steps are based on the scenario that you have waited for around eight

seconds without editing any options. When the Loading ESXi installer window is displayed, wait for a few seconds. When the VMware ESXi 5.1.0 window is displayed, wait for a few seconds.

3. When the welcome window is displayed, press Enter.
4. Press F11 to accept the license agreement and continue with the installation.
5. Select a drive for installation and press Enter.
6. When the Confirm Disk Selection window is displayed, press Enter.
7. Select a keyboard layout and press Enter.
8. Set a root password and press Enter.

Note: The root password must contain at least seven characters.

9. Press F11 to start the installation process.
10. When the Installation Complete window is displayed, press Enter to restart the server. The installation finishes. Remove the disc from the optical drive.

Installing drivers for the VMware ESXi 5.1 Update 1 hypervisor

This topic provides instructions on how to install drivers for the VMware ESXi 5.1 Update 1 hypervisor.

To install drivers for the VMware ESXi 5.1 Update 1 hypervisor, do the following:

1. Download the driver file from the Lenovo Web site. Ensure that the name of the driver file you download is offline-bundle.zip. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at:
<http://www.lenovo.com/drivers>
 2. Log in to the ESXi host as an administrator using the vSphere Client.
 3. Upload the offline-bundle.zip file to the ESXi host using the Datastore Browser.
 4. In the vSphere Client inventory, right-click the host and select **Enter Maintenance Mode**.
 5. Log in to the ESXi host as a root user using SSH or iLO/DRAC.
 6. Use the following command to install the drivers:
`esxcli software vib install -d /path/offline-bundle.zip`
Example:
`esxcli software vib install -d /vmfs/volumes/datastore/offline-bundle.zip`
- Note:** If you are prompted to verify the digital signature for the drivers, add `-no-sig-check` to the command.
`esxcli software vib install -v /vmfs/volumes/datastore/filename.vib -no-sig-check`
7. Restart your server.
 8. In the vSphere Client inventory, right-click the host and select **Exit Maintenance Mode**.

Installing the VMware ESXi 5.5 hypervisor

This topic provides instructions on how to install the VMware ESXi 5.5 hypervisor.

To install the VMware ESXi 5.5 hypervisor, do the following:

1. Insert the installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the message Press Tab to edit options is displayed, you can press Tab and then edit options as you need. The following steps are based on the scenario that you have waited for around eight seconds without editing any options. When the Loading ESXi installer window is displayed, wait for a few seconds. When the VMware ESXi 5.5.0 window is displayed, wait for a few seconds.

3. When the welcome window is displayed, press Enter.
 4. Press F11 to accept the license agreement and continue with the installation.
 5. Select a drive for installation and press Enter.
 6. When the Confirm Disk Selection window is displayed, press Enter.
 7. Select a keyboard layout and press Enter.
 8. Set a root password and press Enter.
- Note:** The root password must contain at least seven characters.
9. Press F11 to start the installation process.
 10. When the Installation Complete window is displayed, press Enter to restart the server. The installation finishes. Remove the disc from the optical drive.

Installing the Hyper-V Server 2008 or Hyper-V Server 2008 R2 operating system

This topic provides instructions on how to install the following operating systems:

- Hyper-V Server 2008
- Hyper-V Server 2008 R2 with Service Pack 1

To install the Hyper-V Server 2008 or Hyper-V Server 2008 R2 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the message Press any key to boot from cd or dvd... is displayed, press any key. If the message Windows Setup [EMS Enabled] is displayed, press Enter. Wait several minutes for the system to load the files.
3. Select the language as you need and then click **Next**.
4. When the “Enter your language and other preferences” window is displayed, configure the language and other options as you need and then click **Next**.
5. Click **Install now**.
6. Read the license terms and select **I accept the license terms**. Then, click **Next**.
7. Select the type of installation as you need. The following steps are based on the scenario that **Custom: (Advanced)** is selected in this step.
8. In the “Where do you want to install Windows?” window, connect the USB storage device that contains the driver to your server and click **Load Driver**.
9. Go to the folder that contains the required driver and click **OK**.
10. Select **Hide drivers that aren’t compatible with this computer’s hardware**, and then select the driver that you want to install on your server. Click **Next**.
11. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**.
12. Select the hard disk drive on which you want to install the operating system, and then click **New**.
13. Type the amount of space (in MB), and then click **Apply**.
14. In the Install Windows window, click **OK**.
15. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

Note: Your server will restart several times during the installation.

16. Before you log in to the server for the first time, do one of the following depending on the operating system:

- For the Microsoft Hyper-V Server 2008 operating system:
 - a. Press Ctrl+Alt+Delete when prompted. Click **Other User**.
 - b. Type Administrator in the **User name** field. Then press Enter.
 - c. Follow the instructions on the screen to change the password.
- For the Microsoft Hyper-V Server 2008 R2 operating system with Service Pack 1:
When prompted, follow the instructions on the screen to change the password.

Note: The password must be a combination of upper case letters, lower case letters, and numbers.

Installing the driver for the chipset

To install the driver for the chipset, do the following:

1. Copy the driver for the chipset from the *ThinkServer EasyStartup DVD* that comes with your server to a USB storage device. Connect the USB storage device to your server.
2. Use the following commands to install the driver:


```
e:
cd Chipsetwindows
cd Win7
Pnputil -i -a *.inf
```

Note: In the command lines, *e:* represents the drive letter of your USB storage device and *ChipsetwindowsWin7* represents the subdirectory where your driver is located.

3. Click **Install**. The installation begins.
4. Restart your server after the installation is completed.

Installing the driver for an Ethernet card

To install the driver for the Ethernet card, do the following:

1. Copy the driver for the Ethernet card from the *ThinkServer EasyStartup DVD* that comes with your server to a USB storage device. Connect the USB storage device to your server.
2. Use the following commands to install the driver:


```
e:
cd NICWIN2K8X86
Pnputil -i -a *.inf
```

Note: In the command lines, *e:* represents the drive letter of your USB storage device and *NICWIN2K8X86* represents the name of the folder where the driver is stored.

3. Restart your server after the installation is completed.

Installing the driver for an onboard graphics card

To install the driver for an onboard graphics card, do the following:

1. Copy the driver for an onboard graphics card from the *ThinkServer EasyStartup DVD* that comes with your server to a USB storage device. Connect the USB storage device to your server.
2. Use the following commands to install the driver:


```
e:
cd VGA
Pnputil -i -a *.inf
```

Note: In the command lines, *e:* represents the drive letter of your USB storage device and *VGA* represents the name of the folder where the driver is stored.

3. Restart your server after the installation is completed.

Installing the driver for Intel Management Engine Interface

To install the driver for Intel Management Engine Interface, do the following:

1. Copy the driver for Intel Management Engine Interface from the *ThinkServer EasyStartup DVD* that comes with your server to a USB storage device. Connect the USB storage device to your server.
2. Use the following commands to install the driver:

```
e:
cd Management
Pnputil -i -a *.inf
```

Note: In the command lines, *e:* represents the drive letter of your USB storage device and *Management* represents the name of the folder where the driver is stored.

3. Restart your server after the installation is completed.

Installing the driver for an HBA card

To install the driver for an HBA card, do the following:

1. Copy the driver for an HBA card from the *ThinkServer EasyStartup DVD* that comes with your server to a USB storage device. Connect the USB storage device to your server.
2. Use the following commands to install the driver:

```
e:
cd HBA
Pnputil -i -a *.inf
```

Note: In the command lines, *e:* represents the drive letter of your USB storage device and *HBA* represents the name of the folder where the driver is stored.

3. Restart your server after the installation is completed.

Installing the driver for a CNA card

To install the driver for a CNA card, do the following:

1. Copy the driver for a CNA card from the *ThinkServer EasyStartup DVD* that comes with your server to a USB storage device. Connect the USB storage device to your server.
2. Use the following commands to install the driver:

```
e:
cd CNA
Pnputil -i -a *.inf
```

Note: In the command lines, *e:* represents the drive letter of your USB storage device and *CNA* represents the name of the folder where the driver is stored.

3. Restart your server after the installation is completed.

Installing the Hyper-V Server 2012 operating system

This topic provides instructions on how to install the Hyper-V Server 2012 operating system.

To install the Hyper-V Server 2012 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the message *Press any key to boot from cd or dvd...* is displayed, press any key. If the message *Windows Setup [EMS Enabled]* is displayed, press Enter. Wait several minutes for the system to load the files.

3. When the “Microsoft Hyper-V Server 2012” window is displayed, configure the language and other options as you need and then click **Next**.
 4. Click **Install now**.
 5. Read the license terms and select **I accept the license terms**. Then, click **Next**.
 6. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install the newer version of Hyper-V Server only (advanced)** is selected in this step.
 7. In the “Where do you want to install Windows?” window, connect the USB storage device that contains the driver to your server and click **Load Driver**.
 8. Go to the folder where the driver is stored and click **OK**.
 9. Select **Hide drivers that aren’t compatible with this computer’s hardware**, and then select the driver that you want to install on your server. Click **Next**.
 10. In the “Where do you want to install Windows?” window, click **Drive options (advanced)**.
 11. Select the hard disk drive on which you want to install the operating system, and then click **New**.
 12. Type the amount of space (in MB), and then click **Apply**.
 13. In the Install Windows window, click **OK**.
 14. Ensure that the drive partition is correct, and then click **Next**. The installation begins.
- Note:** Your server will restart several times during the installation.
15. When prompted, press Ctrl+Alt+Delete.
 16. Click **Administrator**. Follow the instructions on the screen to change the password and then log in to the operating system.

Installing the driver for the chipset

To install the driver for the chipset, do the following:

1. Copy the driver for the chipset from the *ThinkServer EasyStartup DVD* that comes with your server to a USB storage device. Connect the USB storage device to your server.
2. Use the following commands to install the driver:
e:
cd Chipsetwindows
cd Win7
Pnputil -i -a *.inf

Note: In the command lines, e: represents the drive letter of your USB storage device and *Chipsetwindows\Win7* represents the subdirectory where your driver is located.

3. Click **Install**. The installation begins.
4. Restart your server after the installation is completed.

Installing the driver for Intel Management Engine Interface

To install the driver for Intel Management Engine Interface, do the following:

1. Copy the driver for Intel Management Engine Interface from the *ThinkServer EasyStartup DVD* that comes with your server to a USB storage device. Connect the USB storage device to your server.
2. Use the following commands to install the driver:
e:
cd Management
Pnputil -i -a *.inf

Note: In the command lines, e: represents the drive letter of your USB storage device and *Management* represents the name of the folder where the driver is stored.

3. Restart your server after the installation is completed.

Installing the driver for an Ethernet card

To install the driver for an Ethernet card, do the following:

1. Download the driver for the Ethernet card from the Lenovo Web site to your server. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at:
<http://www.lenovo.com/drivers>
2. Copy the driver for the Ethernet card to a USB storage device. Connect the USB storage device to your server.
3. Use the following commands to install the driver:

```
e:
cd /NIC/Intel
Pnputil -i -a *.inf
```

Note: In the command lines, *e:* represents the drive letter of your USB storage device and *NIC/Intel* represents the subdirectory where the driver is located.

4. Restart your server after the installation is completed.

Installing the driver for an onboard graphics card

To install the driver for an onboard graphics card, do the following:

1. Copy the driver for an onboard graphics card from the *ThinkServer EasyStartup DVD* that comes with your server to a USB storage device. Connect the USB storage device to your server.
2. Use the following commands to install the driver:

```
e:
cd VGA
Pnputil -i -a *.inf
```

Note: In the command lines, *e:* represents the drive letter of your USB storage device and *VGA* represents the name of the folder where the driver is stored.

3. Restart your server after the installation is completed.

Installing the driver for an HBA card

To install the driver for an HBA card, do the following:

1. Copy the driver for the HBA card from the *ThinkServer EasyStartup DVD* that comes with your server to a USB storage device. Connect the USB storage device to your server.
2. Use the following commands to install the driver:

```
e:
cd HBA
Pnputil -i -a *.inf
```

Note: In the command lines, *e:* represents the drive letter of your USB storage device and *HBA* represents the name of the folder where the driver is stored.

3. Restart your server after the installation is completed.

Installing the driver for a CNA card

To install the driver for a CNA card, do the following:

1. Copy the driver for the CNA card from the *ThinkServer EasyStartup DVD* that comes with your server to a USB storage device. Connect the USB storage device to your server.
2. Use the following commands to install the driver:

```
e:
cd CNA
Pnputil -i -a *.inf
```

Note: In the command lines, *e:* represents the drive letter of your USB storage device and *CNA* represents the name of the folder where the driver is stored.

3. Restart your server after the installation is completed.

Installing the Hyper-V Server 2012 R2 operating system

This topic provides instructions on how to install the Hyper-V Server 2012 R2 operating system.

To install the Hyper-V Server 2012 R2 operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the message Press any key to boot from cd or dvd... is displayed, press any key. If the message Windows Setup [EMS Enabled] is displayed, press Enter. Wait several minutes for the system to load the files.
3. When the "Microsoft Hyper-V Server 2012 R2" window is displayed, configure the language and other options as you need and then click **Next**.
4. Click **Install now**.
5. Read the license terms and select **I accept the license terms**. Then, click **Next**.
6. Select the type of installation as you need. The following steps are based on the scenario that **Custom: Install the newer version of Hyper-V Server only (advanced)** is selected in this step.
7. In the "Where do you want to install Windows?" window, click **Drive options (advanced)**.
8. Select the hard disk drive on which you want to install the operating system, and then click **New**.
9. Type the amount of space (in MB), and then click **Apply**.
10. In the "Microsoft Hyper-V Server Setup" window, click **OK**.
11. Ensure that the drive partition is correct, and then click **Next**. The installation begins.

Note: Your server will restart several times during the installation.

12. When prompted, press Ctrl+Alt+Delete.
13. Click **Administrator**. Follow the instructions on the screen to change the password and then log in to the operating system.

Installing the driver for the chipset

To install the driver for the chipset, do the following:

1. Download the driver for the chipset from the Lenovo Web site to a USB storage device. Then, connect the USB storage device to your server. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at:
<http://www.lenovo.com/drivers>
2. Use the following commands to install the driver:
e:
cd Chipsetwindows
cd Win7
Pnputil -i -a *.inf

Note: In the command lines, *e:* represents the drive letter of your USB storage device and *Chipsetwindows\Win7* represents the subdirectory where your driver is located.

3. Restart your server after the installation is completed.

Installing the driver for an onboard graphics card

To install the driver for an onboard graphics card, do the following:

1. Download the driver for an onboard graphics card from the Lenovo Web site to a USB storage device. Then, connect the USB storage device to your server. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at:
<http://www.lenovo.com/drivers>
2. Use the following commands to install the driver:
e:
cd VGA
Pnputil -i -a *.inf

Note: In the command lines, e: represents the drive letter of your USB storage device and VGA represents the name of the folder where the driver is stored.

3. Restart your server after the installation is completed.

Installing the driver for Ethernet card

To install the driver for Ethernet card, do the following:

1. Download the driver for Ethernet card from the Lenovo Web site to your USB storage device. Connect the USB storage device to your server. If the driver is a compressed file, extract the file first. The most up-to-date device drivers for various server models are always available for download on the Lenovo Web site at:
<http://www.lenovo.com/drivers>
2. Use the following commands to install the driver:
e:
cd /NIC
Pnputil -i -a *.inf

Note: In the command lines, e: represents the drive letter of your USB storage device and NIC represents the name of the folder where the driver is stored.

3. When the Windows Security dialog box is displayed, click **Install**.
4. Restart your server after the installation is completed.

Installing the driver for an HBA card

To install the driver for an HBA card, do the following:

1. Download the driver for an HBA card from the Lenovo Web site to a USB storage device. Then, connect the USB storage device to your server. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at:
<http://www.lenovo.com/drivers>
2. Use the following commands to install the driver:
e:
cd HBA
Pnputil -i -a *.inf

Note: In the command lines, e: represents the drive letter of your USB storage device and HBA represents the name of the folder where the driver is stored.

3. When the Windows Security dialog box is displayed, click **Install**.
4. When the "Would you like to install this device software" dialog box is displayed, click **Install**.
5. Restart your server after the installation is completed.

Installing the driver for a CNA card

The driver for a CNA card is installed during the operating system installation.

Installing the driver for Intel Management Engine Interface

To install the driver for Intel Management Engine Interface (MEI), do the following:

1. Download the driver for Intel Management Engine Interface from the Lenovo Web site to a USB storage device. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at:
<http://www.lenovo.com/drivers>
 2. Double-click the EXE file to unzip it to a folder and then connect the USB storage device to your server.
 3. Use the following commands to install the driver:
e:
cd /MEI
Pnputil -i -a *.inf
- Note:** In the command lines, e: represents the drive letter of your USB storage device and /MEI represents the name of the folder where the driver is stored.
4. Restart your server after the installation is completed.

Installing the Citrix XenServer hypervisor

This topic provides instructions on how to install the following hypervisors:

- Citrix XenServer 6.0.2 hypervisor
- Citrix XenServer 6.1 hypervisor

To install the Citrix XenServer hypervisor, do the following:

1. Insert the installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
 2. When the “Citrix XenServer installation welcome” window is displayed, press Enter.
 3. Select the appropriate keyboard for the system, select **OK**, and then press Enter.
 4. When the Citrix XenServer setup window is displayed, select **OK** and then press Enter.
 5. Read the End User License Agreement, select **Accept EULA**, and then press Enter.
- Note:** If the Action To Perform window is displayed, configure the settings as you need. Select **OK** and then press Enter.
6. Select the hard disk drive that you want to use for virtual machine storage. Select **OK**, and then press Enter.
 7. Select the installation source as you need. Select **OK**, and then press Enter.
 8. Select **Yes** when prompted to install the supplemental packs and then press Enter.
 9. Depending on your needs, select **Verify installation source** to check all the installation media or select **Skip verification** to skip the check. Then select **OK** and press Enter.
 10. Set your password, select **OK**, and then press Enter.
 11. Depending on your needs, select an Ethernet adapter, select **OK**, and then press Enter.
 12. Configure the IP information as you need. Select **OK** and press Enter.
 13. In the “Hostname and DNS Configuration” window, configure the settings as you need. Then select **OK** and press Enter.
 14. Specify your time zone by selecting the nearest city in your time zone. Select **OK**, and then press Enter.

15. In the System Time window, depending on your needs, select **Using NTP** to set the time through Network Time Protocol (NTP) or select **Manual time entry** to type the time information at the end of the installation. Then select **OK** and press Enter.
16. In the Confirm Installation window, select **Install XenServer** and then press Enter to start the installation.
17. In the New Media window, configure the settings as you need. Select **Skip** and then press Enter.
18. Set your time and date in the Set local time window, select **OK**, and then press Enter.
19. When the installation is completed, a notification window is displayed. Select **OK** and press Enter to restart your server.
20. Remove the disc from the optical drive after the whole process is completed.

Installing drivers for the Citrix XenServer hypervisor

This topic provides instructions on how to install drivers for the Citrix XenServer hypervisor.

To install drivers for the Citrix XenServer hypervisor, do the following:

1. Download the drivers from the Lenovo Web site. Copy the `qla2xxx.iso` file to your USB storage device and connect the USB storage device to your server. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at:
<http://www.lenovo.com/drivers>
2. Use the following commands to install the drivers:

```
mkdir -p /mnt/tmp
mount /dev/sdb1 /mnt/tmp
mount /mnt/tmp/qla2xxx.iso /mnt/tmp -o loop,ro
cd /mnt/tmp/
./install.sh
umount /mnt/tmp
```

Note: In the command lines, *sdb1* represents the drive letter of your USB storage device; *qla2xxx.iso* represents the name of the driver package file; and *install.sh* represents the driver name. Use the corresponding file name on your server.
3. Restart your server.

Chapter 3. Installing an operating system in UEFI mode

This chapter provides information about installing the following operating systems and hypervisors in UEFI mode:

- Microsoft Windows Server 2008 Datacenter Edition (x64)
- Microsoft Windows Server 2008 Enterprise Edition (x64)
- Microsoft Windows Server 2008 Standard Edition (x64)
- Microsoft Windows Server 2008 R2 Datacenter Edition with Service Pack 1
- Microsoft Windows Server 2008 R2 Enterprise Edition with Service Pack 1
- Microsoft Windows Server 2008 R2 Standard Edition with Service Pack 1
- Microsoft Windows Server 2012 Datacenter Edition
- Microsoft Windows Server 2012 Essentials Edition
- Microsoft Windows Server 2012 Standard Edition
- Microsoft Windows Server 2012 R2 Datacenter Edition
- Microsoft Windows Server 2012 R2 Essentials Edition
- Microsoft Windows Server 2012 R2 Standard Edition
- Microsoft Windows Small Business Server 2011 Essentials
- Microsoft Windows Small Business Server 2011 Standard
- Microsoft Windows Small Business Server 2011 Premium Add-on
- Hyper-V Server 2008 R2 with Service Pack 1
- Hyper-V Server 2012
- Hyper-V Server 2012 R2
- Red Hat Enterprise Linux AS 6.4 (x64)
- Red Hat Enterprise Linux AS 6.5 (x64 and x86)
- SUSE Linux Enterprise Server 11 with Service Pack 2 (x64)
- SUSE Linux Enterprise Server 11 with Service Pack 3
- VMware ESXi 5.1 Update 1 hypervisor
- VMware ESXi 5.5 hypervisor

Before installing an operating system in UEFI mode

Before installing an operating system in UEFI mode, do the following:

1. Perform the operations in Chapter 1, see Chapter 1 “Before installing an operating system” on page 1 .
2. Start the Setup Utility program.
3. On the **Boot Options** menu, select **CSM parameter/PXE OpROM policy**.
4. Select **UEFI only**.

Installing the Microsoft Windows Server 2008 operating system and drivers

This topic provides instructions on how to install the following operating systems and drivers:

- Microsoft Windows Server 2008 Datacenter Edition (x64)
- Microsoft Windows Server 2008 Enterprise Edition (x64)
- Microsoft Windows Server 2008 Standard Edition (x64)

Installing the Microsoft Windows Server 2008 operating system

To install the Microsoft Windows Server 2008 operating system, see “Installing the Microsoft Windows Server 2008 operating system” on page 4 .

Installing drivers for a Windows Server 2008 operating system

To install drivers for a Windows Server 2008 operating system, refer to the related topics.

- “Installing the driver for the chipset” on page 5 .
- “Installing the driver for an Ethernet card” on page 5 .
- “Installing the driver for an onboard graphics card” on page 5 .
- “Installing the driver for an HBA card” on page 6 .
- “Installing the driver for Intel Management Engine Interface” on page 6 .
- “Installing the driver for a CNA card” on page 6 .

Installing the Microsoft Windows Server 2008 R2 operating system and drivers

This topic provides instructions on how to install the following operating systems and drivers:

- Microsoft Windows Server 2008 R2 Datacenter Edition with Service Pack 1
- Microsoft Windows Server 2008 R2 Enterprise Edition with Service Pack 1
- Microsoft Windows Server 2008 R2 Standard Edition with Service Pack 1

Installing the Microsoft Windows Server 2008 R2 operating system with Service Pack 1

To install the Microsoft Windows Server 2008 R2 operating system with Service Pack 1, see “Installing the Microsoft Windows Server 2008 R2 operating system with Service Pack 1” on page 7 .

Installing drivers for the Windows Server 2008 R2 operating system with Service Pack 1

To install drivers for the Windows Server 2008 R2 operating system with Service Pack 1, see “Installing drivers for a Windows Server 2008 R2 operating system with Service Pack 1” on page 8 .

Installing the Microsoft Windows Server 2012 operating system and drivers

This topic provides instructions on how to install the following operating systems and the drivers:

- Microsoft Windows Server 2012 Datacenter Edition
- Microsoft Windows Server 2012 Standard Edition

Installing the Microsoft Windows Server 2012 operating system

To install the Microsoft Windows Server 2012 operating system, see “Installing the Microsoft Windows Server 2012 operating system” on page 12.

Installing drivers for a Windows Server 2012 operating system

To install drivers for a Windows Server 2012 operating system, see “Installing drivers for a Windows Server 2012 operating system” on page 13.

Installing the Microsoft Windows Server 2012 Essentials operating system

To install the Windows Server 2012 Essentials operating system, see “Installing the Microsoft Windows Server 2012 Essentials operating system” on page 13.

Installing drivers for the Windows Server 2012 Essentials operating system

To install drivers for the Windows Server 2012 Essentials operating system, see “Installing drivers for the Windows Server 2012 Essentials operating system” on page 14.

Installing a Microsoft Windows Server 2012 R2 operating system

This topic provides instructions on how to install the following operating systems:

- Microsoft Windows Server 2012 R2 Datacenter Edition
- Microsoft Windows Server 2012 R2 Standard Edition

This topic also provides instructions on how to install device drivers for the operating system.

Installing a Microsoft Windows Server 2012 R2 operating system

To install a Microsoft Windows Server 2012 R2 operating system, refer to “Installing a Microsoft Windows Server 2012 R2 operating system” on page 14.

Installing drivers for Windows Server 2012 R2

To install drivers for Windows Server 2012 R2, refer to the related topics.

- “Installing the driver for chipset” on page 15.
- “Installing the driver for an onboard graphics card” on page 15.
- “Installing the driver for an Ethernet card” on page 16.
- “Installing the driver for an HBA card” on page 16.
- “Installing the driver for Intel Management Engine Interface” on page 16.
- “Installing the driver for an AHCI” on page 17.

Note: The driver for a CNA card is installed during the operating system installation.

Installing the Microsoft Windows Server 2012 R2 Essentials operating system

To install the Microsoft Windows Server 2012 R2 Essentials operating system, refer to “Installing the Microsoft Windows Server 2012 R2 Essentials operating system” on page 17.

Installing drivers for the Microsoft Windows Server 2012 R2 Essentials operating system

The driver for a CNA card is installed during the operating system installation.

To install drivers for Windows Server 2012 R2 Essentials, refer to the related topics.

- “Installing the driver for chipset” on page 15.
- “Installing the driver for an onboard graphics card” on page 15.
- “Installing the driver for an Ethernet card” on page 16.
- “Installing the driver for an HBA card” on page 16.
- “Installing the driver for Intel Management Engine Interface” on page 16.
- “Installing the driver for an AHCI” on page 17.

Installing the Microsoft Windows Small Business Server 2011 Essentials operating system

To install the Microsoft Windows Small Business Server 2011 Essentials operating system, see “Installing the Microsoft Windows Small Business Server 2011 Essentials operating system” on page 8 .

Installing drivers for the Windows Small Business Server 2011 Essentials operating system

To install drivers for the Windows Small Business Server 2011 Essentials operating system, see “Installing drivers for the Windows Small Business Server 2011 Essentials operating system” on page 9 .

Installing the Microsoft Windows Small Business Server 2011 Standard operating system

To install the Microsoft Windows Small Business Server 2011 Standard operating system, see “Installing the Microsoft Windows Small Business Server 2011 Standard operating system” on page 9 .

Installing drivers for the Windows Small Business Server 2011 Standard operating system

To install drivers for the Windows Small Business Server 2011 Standard operating system, see “Installing drivers for the Windows Small Business Server 2011 Standard operating system” on page 11.

Installing the Microsoft Windows Small Business Server 2011 Premium Add-on operating system

To install the Microsoft Windows Small Business Server 2011 Premium Add-on operating system, see “Installing the Microsoft Windows Small Business Server 2011 Premium Add-on operating system” on page 11.

Installing drivers for the Windows Small Business Server 2011 Premium Add-on operating system

To install drivers for the Windows Small Business Server 2011 Premium Add-on operating system, see “Installing drivers for the Windows Small Business Server 2011 Premium Add-on operating system” on page 12.

Installing the Hyper-V Server 2008 R2 operating system

To install the Hyper-V Server 2008 R2 operating system, see “Installing the Hyper-V Server 2008 or Hyper-V Server 2008 R2 operating system” on page 41.

Installing drivers for the Hyper-V Server 2008 R2 operating system

To install drivers for the Hyper-V Server 2008 R2 operating system, refer to the related topics.

- “Installing the driver for the chipset” on page 44.
- “Installing the driver for an Ethernet card” on page 42.
- “Installing the driver for an onboard graphics card” on page 42.
- “Installing the driver for an HBA card” on page 43.
- “Installing the driver for a CNA card” on page 43.

Installing the Hyper-V Server 2012 operating system

To install the Hyper-V Server 2012 operating system, see “Installing the Hyper-V Server 2012 operating system” on page 43.

Installing drivers for the Hyper-V Server 2012 operating system

To install drivers for the Hyper-V Server 2012 operating system, refer to the related topics.

- “Installing the driver for the chipset” on page 44.
- “Installing the driver for an Ethernet card” on page 45.
- “Installing the driver for an onboard graphics card” on page 45.
- “Installing the driver for an HBA card” on page 45.
- “Installing the driver for a CNA card” on page 45.

Installing the Hyper-V Server 2012 R2 operating system

To install the Hyper-V Server 2012 R2 operating system, see “Installing the Hyper-V Server 2012 R2 operating system” on page 46.

Installing drivers for the Hyper-V Server 2012 R2

The driver for a CNA card is installed during the operating system installation.

To install drivers for the Hyper-V Server 2012 R2, refer to the related topics.

- “Installing the driver for chipset” on page 15.
- “Installing the driver for an onboard graphics card” on page 15.
- “Installing the driver for an Ethernet card” on page 16.
- “Installing the driver for an HBA card” on page 47.

To install the driver for Intel Management Engine Interface, do the following:

1. Download the driver for Intel Management Engine Interface from the Lenovo Web site to a USB storage device. The most up-to-date device drivers for various server models are always available on the Lenovo Web site at:
<http://www.lenovo.com/drivers>
2. Double-click the EXE file to unzip it to a folder and then connect the USB storage device to your server.
3. Use the following commands to install the driver:
e:
cd Management
Pnputil -i -a *.inf

Note: In the command lines, e: represents the drive letter of your USB storage device and *Management* represents the name of the folder where the driver is stored.

4. Restart your server after the installation is completed.

Installing the Red Hat Enterprise Linux AS 6.4 operating system

To install the Red Hat Enterprise Linux AS 6.4 (x64) operating system, refer to “Installing the Red Hat Enterprise Linux AS 6.4 operating system” on page 34.

Installing drivers for a Red Hat Enterprise Linux AS 6.4 operating system

To install drivers for a Red Hat Enterprise Linux AS 6.4 (x64) operating system, see “Installing drivers for a Red Hat Enterprise Linux AS 6.4 operating system” on page 37.

Installing the Red Hat Enterprise Linux AS 6.5 operating system

This topic provides instructions on how to install the Red Hat Enterprise Linux AS 6.5 (x64 or x86) operating system.

Note: The maximum system memory that the Red Hat Enterprise Linux AS 6.5 (x86) operating system can support is 16 GB.

To install the Red Hat Enterprise Linux AS 6.5 (x64 or x86) operating system, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. When the welcome window is displayed, select the option as you need.

Note: The following steps are based on the scenario that **Install or upgrade an existing system** is selected in this step.

3. In the Disc Found window, select **Skip**, and then press Enter.
4. In the installation window, click **Next**.
5. In the RED HAT window, click **Next**.
6. Select the language that you want to use during the installation process and click **Next**.
7. Select the appropriate keyboard layout for the system and click **Next**.
8. Select the type of devices for the installation and then click **Next**.

Notes:

- The following steps are based on the scenario that **Basic Storage Devices** is selected in this step.

- When prompted, select the option as you need. The following steps are based on the scenario that you select **Fresh installation** and then click **Next**.

9. Type a name for your server. Then, click **Next**.
10. Specify your time zone by selecting the nearest city in your time zone. Then, click **Next**.
11. Personalize the server by typing the root password for the root user account. Then, click **Next**.

Note: If a message prompts you that the password is weak, click **Use Anyway**.

12. By default, a partition is already selected for you to install the operating system. If you want to create a partition manually, select the option as you need and then click **Next**.

Note: The following steps are based on the scenario that **Create Custom Layout** is selected in this step.

13. In the Please Select A Device window, do one of the following to create a partition and then click **Next**.
 - Manually create a root partition (/)

To create a root partition, do the following:

 - a. Click **Create**. The Create Storage window is displayed.
 - b. Select **Standard Partition** and then click **Create**.
 - c. In the Add Partition window, select the forward slash (/) from the **Mount Point** drop-down list box.
 - d. Select **ext4** from the **File System Type** drop-down list box.
 - e. In the Allowable Drivers window, select the hard disk drive on which you want to install the operating system.
 - f. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.
 - Manually create a boot partition (/boot)

To create a boot partition, do the following:

 - a. Click **Create**. The Create Storage window is displayed.
 - b. Select **Standard Partition** and then click **Create**.
 - c. In the Add Partition window, select **/boot/efi** from the **Mount Point** drop-down list box.
 - d. Select **EFI System Partition** from the **File System Type** drop-down list box.
 - e. In the Allowable Drivers window, select the hard disk drive on which you want to install the operating system.
 - f. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.
 - Manually create a swap partition

To create a swap partition, do the following:

 - a. Click **Create**. The Create Storage window is displayed.
 - b. Select **Standard Partition** and then click **Create**.
 - c. In the Add Partition window, select **swap** from the **File System Type** drop-down list box.
 - d. In the Allowable Drivers window, select the hard disk drive on which you want to install the operating system.
 - e. Type the amount of space (in MB) in the New Partitions Size window and then click **OK**.
14. In the Format Warnings window, click **Format** to format the hard disk drive.
15. In the “Writing storage configuration to disk” window, click **Write changes to disk**.
16. In the “Boot loader operating system list” window, click **Next**.
17. The default installation is a basic server installation. You can customize your server by selecting a different set of software from the software list or adding additional repositories that you want to use

for the software installation. Select **Customize now** or **Customize later**. Then, click **Next**. The installation process begins.

Note: If you select **Customize now**, you can select software installation packages of your choice by clicking **Optional packages** in the window displayed. Then, click **Next**.

18. After the installation is completed, click **Reboot** to restart your server.
19. The installation continues after the server restarts. In the Welcome window, click **Forward**.
20. Click **Yes, I agree to the License Agreement** and then click **Forward**.
21. In the Set Up Software Updates window, configure the settings as you need, and then click **Forward**.
22. In the Finish Updates Setup window, click **Forward**.
23. Set your user name and password and then click **Forward**.
24. Set your time and date and then click **Forward**.
25. In the Kdump window, select **Enable kdump** if you want to enable kdump, and then click **Finish** to complete the installation.

Note: When prompted to restart the server, click **Yes**.

26. Follow the instructions on the screen to log in to the operating system.

Installing drivers for a Red Hat Enterprise Linux AS 6.5 operating system

This topic provides instructions on how to install drivers for a Red Hat Enterprise Linux AS 6.5 (x64 or x86) operating system.

Note: The drivers for a CNA card, an Ethernet card, and an HBA card are installed during the operating system installation.

To install the driver for an onboard graphics card, see “Installing drivers for a Red Hat Enterprise Linux AS 6.5 operating system” on page 39.

Installing the SUSE Linux Enterprise Server 11 operating system with Service Pack 2

To install the SUSE Linux Enterprise Server 11 operating system with Service Pack 2, see “Installing the SUSE Linux Enterprise Server 11 operating system with Service Pack 2” on page 22.

Installing drivers for the SUSE Linux Enterprise Server 11 operating system with Service Pack 2

To install drivers for the SUSE Linux Enterprise Server 11 operating system with Service Pack 2, see “Installing drivers for the SUSE Linux Enterprise Server 11 operating system with Service Pack 2” on page 24.

Installing the SUSE Linux Enterprise Server 11 operating system with Service Pack 3

This topic provides instructions on how to install the SUSE Linux Enterprise Server 11 (x64 or x86) operating system with Service Pack 3.

Note: The maximum system memory that the SUSE Linux Enterprise Server 11 (x86) operating system can support is 16 GB.

To install the SUSE Linux Enterprise Server 11 (x64 or x86) operating system with Service Pack 3, do the following:

1. Insert the operating system installation disc into the optical drive that you have set as the first startup device. Then, start the server from the optical drive.
2. In the “SUSE Linux Enterprise Server Welcome” window, select **Installation**. Then, press Enter.
3. Select your language and keyboard layout and then select **Yes, I Agree to the License Agreement**. Click **Next**.
4. In the Media Check window, click **Next**.
5. In the Installation Mode window, click **New Installation**, and then click **Next**.
6. Verify your region and time zone, and then click **Next**.
7. In the Server Base Scenario window, select **Physical Machine(Also for Fully Virtualized Guests)** and then click **Next**.
8. When the Installation Settings window is displayed, create a drive partition as you need.
 - Manually create a root partition (/)
To create a root partition, do the following:
 - a. Click **Partitioning** and select **Create Custom Partition Setup**. Click **Next**.
 - b. In the Preparing Hard Disk window, select **Custom Partitioning (for experts)**, and then click **Next**.
 - c. In the Expert Partitioner window, select **Hard Disks → sda** in the **System View** area, and then click **Create**.
 - d. Type the amount of space (in MB or GB) in the **Custom Size** field.
 - e. In the **Format** area, select **Ext3** from the **File system** drop-down list box.
 - f. In the **Mounting Options** area, select the forward slash (/) from the **Mount Point** drop-down list box.
 - g. Click **OK**.
 - Manually create a boot partition (/boot)
To create a boot partition, do the following:
 - a. Click **Partitioning** and select **Create Custom Partition Setup**. Click **Next**.
 - b. In the Preparing Hard Disk window, select **Custom Partitioning (for experts)**, and then click **Next**.
 - c. In the Expert Partitioner window, select **Hard Disks → sda** in the **System View** area, and then click **Create**.
 - d. Type the amount of space (in MB or GB) in the **Custom Size** field.
 - e. In the **Format** area, select **FAT** from the **File system** drop-down list box.
 - f. In the **Mounting Options** area, select **/boot/efi** from the **Mount Point** drop-down list box.
 - g. Click **OK**.
 - Manually create a swap partition
To create a swap partition, do the following:
 - a. Click **Partitioning** and select **Create Custom Partition Setup**. Click **Next**.
 - b. In the Preparing Hard Disk window, select **Custom Partitioning (for experts)**, and then click **Next**.
 - c. In the Expert Partitioner window, select **Hard Disks → sda** in the **System View** area, and then click **Create**.
 - d. Type the amount of space (in MB or GB) in the **Custom Size** field.
 - e. In the **Format** area, select **Swap** from the **File system** drop-down list box.
 - f. In the **Mounting Options** area, select **Swap** from the **Mount Point** drop-down list box.

- g. Click **OK**.
9. Click **Finish**.
10. In the Installation Settings window, click **Software** to select your desired software programs, and then click **OK**.

Note: If you are prompted to verify the changes, click **Accept**.

11. Click **Install** to install the software programs that you have selected.
12. When the Confirm Installation window is displayed, click **Install**. When the installation process is completed, the server restarts automatically.
13. The setup process continues after the server restarts. Set your root user password. Then, select **Next** and press Enter.

Note: The password must contain at least six characters and consist of upper case letters, lower case letters, and numbers.

14. Set your host name and domain name. Then, select **Next** and press Enter.
15. Configure your network in the Network Configuration window. Then, select **Next** and press Enter.

Note: If the Test Internet Connection window is displayed, configure the settings as you need. Then, select **Next** and press Enter.

16. In the “Network Services Configuration” window, click **Next**.
17. In the “User Authentication Method” window, configure the settings as you need. Select **Next** and press Enter.
18. In the New LDAP User window, configure the settings as you need. Select **Next** and press Enter.
19. In the Release Notes window, select **Next** and then press Enter.
20. In the Hardware Configuration window, select **Next** and then press Enter.
21. In the Installation Completed window, click **Finish**.
22. Follow the instructions on the screen to log in to the operating system.

Installing drivers for the SUSE Linux Enterprise Server 11 operating system with Service Pack 3

This topic provides instructions on how to install drivers for the SUSE Linux Enterprise Server 11 (x64 or x86) operating system with Service Pack 3.

To install drivers for the SUSE Linux Enterprise Server 11 operating system with Service Pack 3, refer to the related topics.

- “Installing drivers for an Ethernet card” on page 27.
- “Installing drivers for an onboard graphics card” on page 28.

Note: The drivers for an HBA card and a CNA card are installed during the operating system installation.

Installing the VMware ESXi 5.1 Update 1 hypervisor

To install the VMware ESXi 5.1 Update 1 hypervisor, refer to “Installing the VMware ESXi 5.1 Update 1 hypervisor” on page 39.

Installing drivers for the VMware ESXi 5.1 Update 1 hypervisor

To install drivers for the VMware ESXi 5.1 Update 1 hypervisor, see “Installing drivers for the VMware ESXi 5.1 Update 1 hypervisor” on page 40.

Installing the VMware ESXi 5.5 hypervisor

To install the VMware ESXi 5.5 hypervisor, refer to “Installing the VMware ESXi 5.5 hypervisor” on page 40.

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